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U. S. Department of Agriculture.
DESCRIPTIVE CATALOGUE

OF

AGRICULTURAL AND HORTICULTURAL
IMPLEMENTS, MACHINES,
AND SEEDS,

BY

RUGGLES, NOURSE & MASON,

MANUFACTURERS OF IMPLEMENTS

AT

WORCESTER, MASS.

AND WHOLESALE AND RETAIL DEALERS IN

AGRICULTURAL IMPLEMENTS AND MACHINES,

Garden, Field and Flower Seeds, Guano, Bone Dust, &c.

AND

AGRICULTURAL AND HORTICULTURAL PUBLICATIONS.

ALSO, AGENTS FOR

THE PRINCIPAL NURSERIES IN THE VICINITY,

AT THE

QUINCY HALL

AGRICULTURAL WARE-HOUSE

AND SEED STORE,

OVER QUINCY MARKET,--ENTRANCE SOUTH MARKET ST.,

BOSTON.

— WITH —

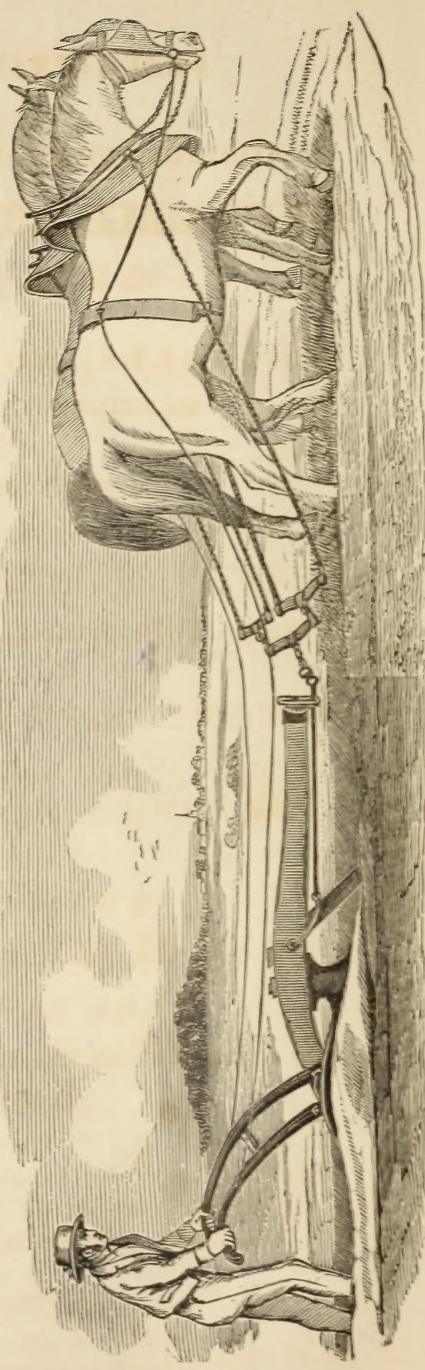
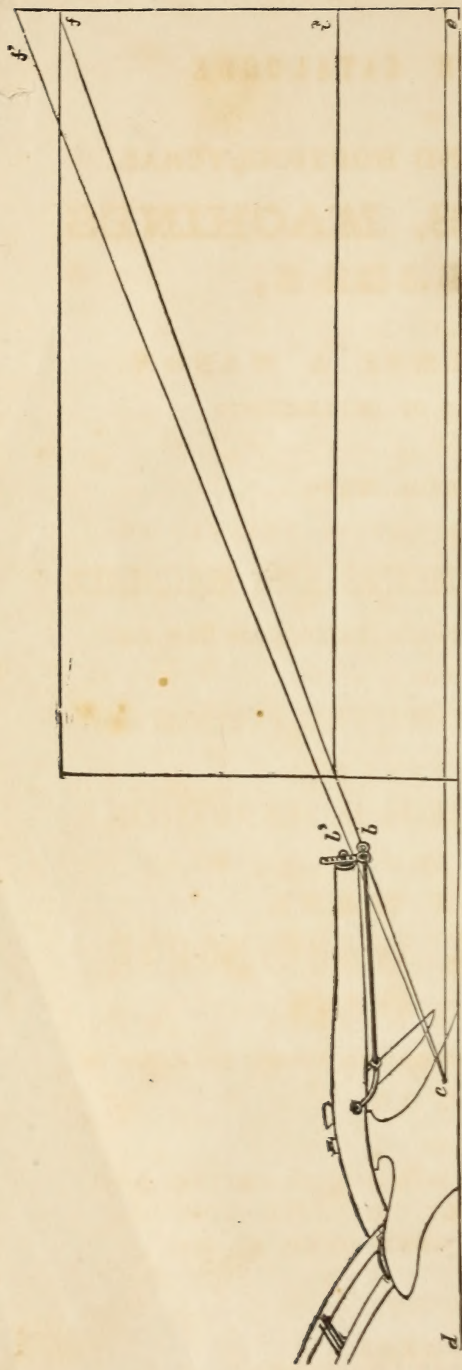
**BRIEF DIRECTIONS FOR SOWING, PLANTING, AND
CULTURE, AND RULES FOR THE APPLICATION OF
GUANO, PLASTER, BONE DUST, &c. &c.**

WORCESTER:

PRINTED BY HENRY J. HOWLAND.

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See Pages 12 and 13.

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## ADVERTISEMENT.

The Proprietors, in presenting their new Catalogue to the Public, beg to remark that during the past year they have added to the previously extensive assortment many new Implements and Machines, and others of such improved construction as will greatly facilitate the labors of the Farmer.

Their extensive Manufactory at Worcester, and Warehouse at Boston, are probably the largest establishments of the kind in the Union. The very rapidly increasing interest manifested in agriculture, and the liberal encouragement which has been given to the proprietors by enlightened Agriculturalists from all parts of the country, has led them to make such arrangements, as will enable them to bring before the farming community with the shortest possible delay, any new or improved implements or machines, and any new and valuable variety of Garden or Field seeds, which may be brought forward and proved to be really worthy of use or cultivation, whether originating in this or other countries.

All of their most important Implements are made at their own manufactory, and under the immediate superintendence of two of the proprietors. They have always kept in mind as most important that oldest and most useful implement, the Plow, on which they have expended most thought, time, and money, in endeavoring to perfect. And they flatter themselves that they have embodied in the various sizes of their Eagle Plows, the best form to take up the furrow slice, and turn it over in the most perfect manner with the least power of draft, leaving the soil in the best possible condition for after cultivation, which with the unequalled strength and durability of their castings, render them superior for the modes of cultivation practised in this country, to any plow ever presented to the notice of the agricultural public. One evidence of their superiority, and the high estimation in which they are held wherever they

have been introduced, is the great number of premiums that have been awarded to them at the fairs and plowing matches in all parts of the Union.

Their Seed department is under the superintendence of a careful and experienced seedsman; and having engaged the most responsible men to raise seeds expressly for their establishment; with a sincere desire to do justly, and with experienced and careful assistants, purchasers may feel confident that every variety sent out will prove true to its name.

# RUGGLES, NOURSE & MASON'S GENUINE EAGLE PLOWS.

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These plows are made by the proprietors from patterns of their own peculiar invention, and in their great variety of sizes, forms and fixtures, are found those adapted to all kinds and conditions of soil, and modes of culture in the different parts of the Union.

In the construction of the wood part of their plows, they use machinery particularly adapted to that business, patented, and only used by themselves, which forms all plows of the same size, one precisely like another, insuring a uniform operation; they are readily and quickly taken apart and put up compactly for distant transportation; and when any part is needed for repairs, the manufacturers furnish cheaply and quickly the part required, which is sure to fit, and the farmer is at once accommodated; he can attach the parts himself, and not be under the necessity of carrying his plow to a distance to be repaired by inexperienced hands, and is insured that his plow will operate as at first.

The timber of which these plows are made, (the Worcester County white oak) is so widely and favorably known as to require no remarks.

The Mould-board, Landside and Point are *ground and polished*, and coated with blue varnish to prevent rusting, which gives them the appearance of blued steel: thus they are fitted for use in the most adhesive soil, so that the dirt will not adhere and impede their progress, and are fast taking the place of the wrought iron or steel mould-boards so much used in the rich lands of southern and western states, as they move equally free and cost much less.

The iron of which they are made is composed of an admixture of several kinds, which produces a metal of far greater strength and durability than the ordinary iron used for the purpose, and endures safely the chilling process which is applied to the *point* and *wing* of the share and *base* of the landside. This process insures at least one hundred per cent. more service in those parts, so soon worn out on most other plows.

At the most full, perfect trial and investigation of plows ever had in this country, held at Essex Co. Mass., the Judging Committee, in speaking of the Improved Eagle Plow, to which they unanimously awarded the highest premium, say:—"As near as we can ascertain, this Plow combines all the good qualities manifested in either of the others, with some peculiar to itself;" and further, "our attention was called to the *quality* of the castings on the Plows of Ruggles & Co., their *finish* and *durability*. Their appearance is certainly more perfect than any thing we have elsewhere seen." "The process of Chilling the Point, the entire Edge of the Share and Flange or Base of the Landside, gives a permanence and durability to the work that renders it of a decidedly superior character," "and we think there is no hazard in saying, that the value of the parts thus made is more than doubled by the process."

The following is a copy of their table showing the comparative amount of power in pounds, required to operate the different plows.

| <i>Medium Size Plows.</i> |                      | <i>Large Size Plows.</i> |                            |
|---------------------------|----------------------|--------------------------|----------------------------|
| Winslow's                 | of Danvers, 462 lbs. | Winslow                  | of Danvers, 512 lbs.       |
| Ruggles & Co.,            | of Worcester, 412 "  | Ruggles & Co.,           | Eagle, of Worcester, 425 " |
| Prouty & Co.,             | of Boston, 425 "     | Prouty & Co.,            | Sod A. of Boston, 487 "    |
| Howard,                   | of Hingham, 412 "    | Howard,                  | of Hingham 450 "           |

The following Table shows the number of Premiums awarded to competitors contending for the prizes before the several different Societies named, and the number awarded to those who used Plows made by RUGGLES, NOURSE & MASON.

| <i>Name of Society.</i> | <i>Year.</i> | <i>No. of Premiums offered.</i> | <i>No. of Premiums awarded as above.</i> |
|-------------------------|--------------|---------------------------------|------------------------------------------|
| Essex County, Mass.     | 1843         | 10 premiums,                    | 9 premiums.                              |
| do do do                | 1844         | 8 do                            | 6 do                                     |
| do do do                | 1845         | 11 do                           | 11 do                                    |
| do do do                | 1846         | 10 do                           | 10 do                                    |
| Middlesex do do         | 1843         | 8 do                            | 5 do                                     |
| do do do                | 1844         | 8 do                            | 5 do                                     |
| do do do                | 1845         | 8 do                            | 6 do                                     |
| Worcester do do         | 1840         | 9 do                            | 9 do                                     |
| do do do                | 1841         | 9 do                            | 9 do                                     |
| do do do                | 1842         | 9 do                            | 9 do                                     |
| do do do                | 1843         | 12 do                           | 12 do                                    |
| do do do                | 1844         | 11 do                           | 7 do                                     |
| do do do                | 1845         | 10 do                           | 8 do                                     |
| do do do                | 1846         | 10 do                           | 6 do                                     |
| Plymouth do do          | 1844         | 6 do                            | 6 do                                     |
| do do do                | 1845         | 5 do                            | 3 do                                     |
| Bristol do do           | 1845         | 11 do                           | 7 do                                     |
| Hampden do do           | 1844         | 3 do                            | 2 do                                     |
| Berkshire do do         | 1845         | 6 do                            | 3 do                                     |
| do do do                | 1845         | 8 do                            | 7 do                                     |
| do do do                | 1846         | 10 do                           | 6 do                                     |
| Barnstable do do        | 1845         | 4 do                            | 3 do                                     |
| Hartford do Conn.       | 1845         | 3 do                            | 3 do                                     |
| Dutchess do N. Y.       | 1845         | 2 do                            | 2 do                                     |
| Windham do Vt.          | 1845         | 4 do                            | 2 do                                     |
|                         |              | 195                             | 158                                      |

We have to remark, that the competition in nearly all the above named trials, was as much between the different plow-makers as the plow-men, for such general use is considered very decisive of the merits of the different plows used, and in most instances named, the Eagle plows had to contend with the many kinds made in New England, for which great excellence is claimed by the makers, and those interested in the sales—yet in EVERY CASE, the first premiums were awarded to plowmen who performed their work with the Worcester Eagle Plow.

In 1846, the first premiums were awarded to competitors who used Plows made by Ruggles, Nourse and Mason, at Plowing matches in the following named Counties, to wit: Essex, Middlesex, Worcester, Hampshire and Berkshire, in Mass.; Orleans and Windham, Vt.; Kennebec, Me.; Litchfield and Hartford, Conn.; Prince George's and Montgomery Counties, Md.

At the New York State Agricultural Society's Fair, held at Albany, in 1842, were collected many plows from all parts of the State, in con-

sequence of the Society having offered premiums for the best, (but which for reasons were never awarded,) and a purse of \$55.00 was made up, and a sweep stake plowing match with eleven competitors was had in *stiff sod*, and the purse awarded to Thomas J. Hillhouse, Esq., whose man and team performed the best work with Ruggles & Co.'s Eagle No. 1.

It is the *peculiar* form of the Worcester Eagle plows to perform their work in the best and easiest possible manner, their varied adaptation to different soil and tillage, throughout the whole country, and to the above named and other improvements, that has gained for them so enviable and widely extended celebrity. A very strong testimony of their great superiority, and the high estimation in which they are held by the farmers is, that the plow makers in Boston, New York, and elsewhere have attempted to imitate them by putting upon their plows the same *names* and *Nos.* as, "*Eagle*" &c., and thus endeavor to palm off their own upon the public as the genuine Eagle plows.

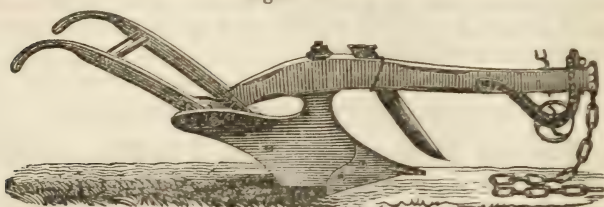
### RUGGLES, NOURSE & MASON'S Retail Price Card of Plows, 1847.

| Plows.                        | Name.                     | With<br>common<br>Clevis. | Wheel or<br>Cutter, | Wheel and<br>Cutter, | Draft-<br>rod,<br>Wheel &<br>Cutter. |
|-------------------------------|---------------------------|---------------------------|---------------------|----------------------|--------------------------------------|
| Light Horse, . .              | No. 14, . . . . .         | \$3 25                    | .....               | .....                |                                      |
| Medium Horse, .               | " 15, . . . . .           | 4 50                      | .....               | .....                |                                      |
| Small do. . . .               | " A 1, . . . . .          | 3 25                      | .....               | .....                |                                      |
| Medium do. . .                | " A 2, . . . . .          | 4 50                      | .....               | .....                |                                      |
| Seed or Stubble               | " A 3, . . . . .          | 7 00                      | 8 00                | 9 00                 |                                      |
| Horse, . . . . .              | " 1 B, . . . . .          | 6 00                      | 7 00                | 8 00                 |                                      |
| Stubble, . . . .              | " 2 B, . . . . .          | 7 50                      | 8 75                | 10 00                |                                      |
| One Horse, . . .              | Imp. Eagle, No. 0, .      | 6 00                      | 7 00                | 8 00                 |                                      |
| Light Sod, . . .              | " " " 1, . . . . .        | 8 00                      | 9 25                | 10 50                | 11 00                                |
| " " " " " 1, Coul.,           | " " " 1, Coul.,           | 9 00                      | 10 25               | 11 50                | 12 00                                |
| Medium Sod, . .               | " " " 2, . . . . .        | 8 50                      | 9 75                | 11 00                | 11 50                                |
| " " " " " 2, Coul.,           | " " " 2, Coul.,           | 10 00                     | 11 25               | 12 50                | 13 00                                |
| Large " " " " " 25, . . .     | " " " 25, . . . . .       | 10 00                     | 11 50               | 13 00                | 14 00                                |
| Medium " " " " Sward C, . . . | " " " Sward C, . . .      | 9 00                      | 10 50               | 12 00                | 13 00                                |
| Large " " " " " B, . . . . .  | " " " B, . . . . .        | 10 00                     | 11 50               | 13 00                | 14 00                                |
| " " " " " D, Coul.,           | " " " D, Coul.,           | 12 00                     | 13 50               | 15 00                | 16 00                                |
| Light Horse, . .              | Eagle S. Sharpener, No. 1 | 5 00                      | .....               | .....                |                                      |
| One Horse, . . .              | " " " " " 2               | 6 50                      | 7 50                | 8 50                 |                                      |
| Medium Sod, . .               | " " " " " 3               | 8 50                      | 9 75                | 11 00                | 11 50                                |
| Large do. . . .               | " " " " " 4               | 9 50                      | 10 75               | 12 00                | 12 50                                |
| Heavy do. . . .               | " " " " " 5               | 10 50                     | 12 00               | 13 50                | 14 50                                |
| Medium Sod, . .               | Left Hand S. " No. 40     | 10 00                     | 11 50               | 13 00                | 14 00                                |
| 3 or 4 Horse, . .             | " " " " " 41              | 12 50                     | 14 00               | 15 50                | 16 50                                |
| One Horse, . . .              | No. 0 Side Hill, . . .    | 5 00                      | .....               | .....                |                                      |
| Two do. . . . .               | " A 1, " . . . . .        | 9 00                      | 10 25               | 11 50                | 12 00                                |
| Sod, . . . . .                | " A 2, " . . . . .        | 10 00                     | 11 50               | 13 00                | 14 00                                |
| Large Sod, . . .              | " A 3, " . . . . .        | 12 00                     | 13 50               | 15 00                | 16 00                                |
| Heavy Road, . .               | " A 4, " . . . . .        | 14 00                     | D. Rod 15 00        | .....                |                                      |
| One Horse, . . .              | " 0 Sub Soil, . . . .     | 5 50                      | 6 50                | 8 00                 |                                      |
| Two do. . . . .               | " 1 " . . . . .           | 7 00                      | 8 50                | 10 00                |                                      |
| Heavy, . . . . .              | " 2 " . . . . .           | .....                     | D. Rod 12 00        | 13 50                |                                      |
| Dble wing & pt. .             | " 3 " . . . . .           | .....                     | D. Rod 15 00        | 16 50                |                                      |
| Cotton, . . . . .             | Davis 6 inch., . . . .    | 3 25                      | .....               | .....                |                                      |
| " " " " " 7 " . . . . .       | " 7 " . . . . .           | 3 50                      | .....               | .....                |                                      |
| Rice, . . . . .               | Trenching, . . . . .      | 6 00                      | .....               | .....                |                                      |
| Bidging, . . . .              | No. 1 Double Mould, .     | 3 50                      | .....               | .....                |                                      |
| " " " " " 2 " . . . . .       | " 2 " . . . . .           | 7 00                      | .....               | .....                |                                      |

## DESCRIPTION OF PLOWS.

**Eagle No. 1.** *With Wheel and Cutter.*

Figure 1.



[For uses and advantages of Wheel and Cutter, see "Remarks on Plowing," pages 12 and 13.]

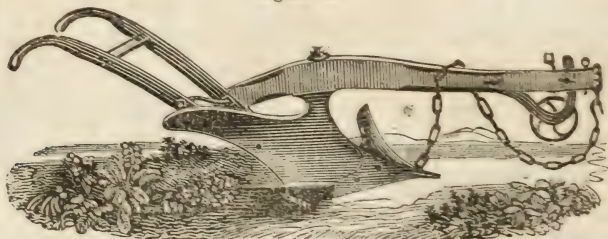
Eagle No. 1 is called at the North a *medium* sized sod or stubble plow, and is easily drawn by a pair of horses or oxen. At the South it would be considered a large size, and it would generally require three mules to turn a furrow with it six inches deep and eleven inches wide, although this has often been accomplished with a single pair. It cuts a furrow any required depth to seven inches, and ten to twelve inches wide.

**Eagle No. 1.—With Lock-Coulter.**

[For form of Lock-Coulter, see Fig. 3.]—Is the same size and shape, and performs the same work as Eagle No. 1 with *cutter*.

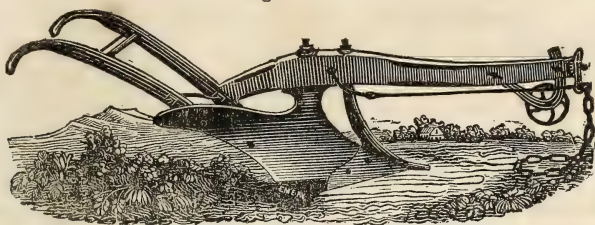
**Eagle No. 2.** *With Coulter or Fin Cutter and Wheel.*

Figure 2.



A two cattle sod or stubble plow, of same construction, but one size larger than Eagle No. 1. It cuts a furrow any required depth to eight inches, and twelve to fourteen inches wide.

**Eagle No. 2.** *With Lock Coulter, Wheel and Draft Rod.*  
Figure 3.

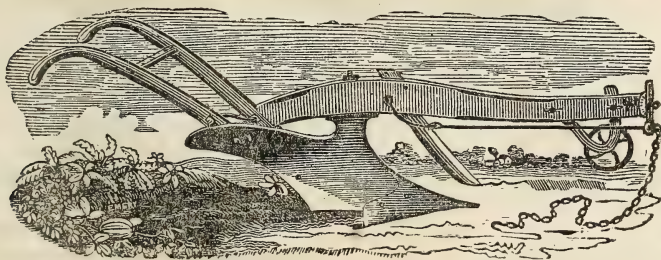


This cut represents the late improvements of a draft-rod, regulated by a simple dial, recently patented by Ruggles, Nourse and Mason, attached to the end of the beam, by which the plowman can easily and quickly place the end of the rod in a position that will cause the plow to take any required width or depth of furrow, gauging it to a quarter of an inch, if necessary to be so exact.

By the use of the Draft Rod the liability to break the beam is very greatly diminished.

As *deep plowing* is now advocated and fast gains favor among the best practical and scientific farmers, the proprietors have had much regard to that object in constructing their patterns, and by combining the draft-rod with the peculiarly adapted form of the "Eagle" plows they perform **EXTRA DEEP** work with great ease and excellence, and at the same time they are easily arranged to make but ordinary or shoal furrows with equal facility. Combining the dial-clevis and the draft-rod, it enables the plowman to run his plow close alongside of a fence or ditch, or turn up wet meadows or rice lands, with the off as well as the near animal treading on the *unbroken* ground, instead of the miry open furrow.

**Eagle No. 25.** *With Wheel, Cutter and Draft Rod.*  
Figure 4.



A four cattle sod or stubble plow. It is also admirably adapted for breaking up rough ground and trench plowing. It is the best plow for covering up a *great growth of weeds, stubble and grass* we know of. It cuts a furrow any required depth to twelve inches, or even deeper if wished, and sixteen to eighteen inches wide.

**Sward C.** A strong three-cattle plow, particularly calculated for breaking up deep rough or stony sward soils. It is a size larger than Eagle No. 2.

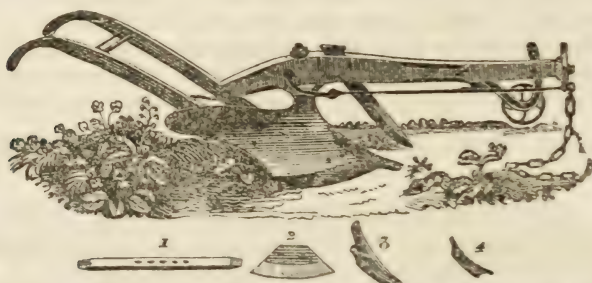
**Sward B.** A strong four-cattle plow of same construction nearly as sward C, but one size larger.

**Sward D.** *For Reclaiming Meadows.*

A strong four cattle plow, same size and form as sward B, with the addition of a wrought *lock-coulter* as attached to Eagle No. 2. fig. 3. To this plow is affixed, when required, a sharp steel-edged share or point, cutting very wide, and a reversed or drag *cutter* for the purpose of plowing and completely turning over the surface of wet meadows when drained by ditching. A crane clevis is attached to the end of the beam which enables the off ox or horse to keep clear of the miry open furrow, so very fatiguing to him, and tread on the *unbroken* ground, thus making it comparatively easy work for the team, and obviating the great objection to breaking up wet meadows or swampy ground. The newly invented dial-clevis and draft-rod, as described in Eagle No. 2. fig. 3, will enable the off horse to tread on solid ground in plowing wet meadows, nearly as well as the crane clevis. It also enables the plowman to run the plow close alongside of a fence or ditch. This would be an admirable plow for the rice lands on the Mississippi, and for the prairie lands of the West. When the meadow fixtures are removed, and the original point or share replaced, the plow is again adapted to the rugged upland soils, thus answering the double purpose of an upland and meadow plow.

**Eagle self-sharpening and adjustable Steel-pointed Plows.**

Figure 5.



These have the same superior form and general construction as the celebrated Eagle Plows of our make, with the exception that the point and share consists of two pieces, which are made on an *improved self-sharpening principle*.

The point, as shown detached at No. 1, fig. 5, is simply a bar of *wrought iron* *steeled* at each end, about twenty inches long, and passes upward into the body of the plow, where it is confined with one bolt. As it becomes shorter, and worn on the under side, it is readily moved forward and turned the other side up, thus always presenting a sharp point of *full length* and *proper shape*; when one end is worn off five inches, the other end is placed forward and performs a like service. The wing or share, as shown detached at No. 2, is made of either wrought iron with steel edge or of cast iron, and is also reversable, being used either end forward or either side up.

Both point and share are so very simply constructed that any blacksmith can replace them at trifling expense, or perpetuate the use of the original by new-laying with steel, as they become worn.

There is a coulter of cast-iron a little back and above the point, as in Fig. 2, page 8, and shown detached at No. 3, Fig. 5, forming part of a cap, shown detached at No. 4, which cap protects the shin or forward part of the mould-board; it is confined in its place by the same bolt that confines the point, and is cheaply replaced when worn.

This is much less expensive, and in many kinds of soils quite as serviceable as a wrought coulter or cutter, as shown by the cut above. They are sold with one or both, or with simply the cap.

We commend these plows particularly for the southern plantations, for their own blacksmiths can easily repair them.

Self-sharpening points and shares have been considered objectionable, inasmuch as they have not possessed sufficient strength, owing to their complicated construction, of *cast metal*: but a single glance at these plows will convince any person, by the simple construction of the point and share of *wrought iron and steel*, that they combine strength and durability unequalled by any other form or construction, and that they are kept in repair at much less trouble and expense.

The point can be used projecting more or less forward, causing the plow to incline more or less into the ground, as different soils may require.

#### **Eagle Self-sharpener, No. 1.**

A light one horse or mule plow.

#### **Eagle Self-sharpener, No. 2.**

A medium sized one horse plow, useful at South and North.

#### **Eagle Self-sharpener, No. 3.**

A medium sized two horse or cattle plow, for sod or stubble land.

#### **Eagle Self-sharpener, No. 4.**

A large sized two horse or cattle plow.

#### **Eagle Self-sharpener, No. 5.**

A strong breaking up plow. It is an admirable implement for breaking up deep stony soils.

### **Eagle Left Hand Plow.**

They are made to turn the furrow slice to the left instead of the right hand, and are constructed upon the same self-sharpening and adjustable steel pointed principle as described above.

They are used in many parts of the West, principally by the German and Dutch farmers.

To these are attached, or can be, all the different fixtures as to the right hand plows.

In those sections where three or more horses are sometimes used abreast, the DRAFT ROD has a very great additional advantage, as the plowman readily adapts the plow to be drawn either by two or more horses.

They are designed to be used with heavy teams in rugged soils, and possess *extra strength of timber and metal*.

**Left Hand No. 40.**

Is a size suitable to be drawn by two strong horses.

**Left Hand No. 41.**

Is a heavy large size and designed to be drawn by three or more horses.

**Explanation of Cutter, Coulter or Fin Cutter, and Lock Coulter.**

And here it may be proper to explain the difference between a *cutter*, a *coulter* or *fin cutter*, and *lock-coulter*, as the terms are loosely used by many as synonymous. The *cutter* in fig. 1, is of wrought iron, edged with steel of the best quality. It passes through a mortice in the centre of the beam, where it is fastened by an iron clamp, and reaches down nearly to the point of the share. It can be raised or lowered at pleasure, or be taken out of the beam entirely. It is also clasped on the side of the beam when required.

The Coulter or Fin Cutter in fig. 2, is cast on to the point of the plow share, and thus forms a part of it.

The Lock-Coulter, in fig. 3, is also made of wrought iron, steel-edged. It passes through the beam, and is made fast with a nut, and screw, or key, and locks through the point and mould-board where they join. This gives it great strength, and makes the plow suitable to be used among rocks, and especially the roots of newly cleared land, for the lock-coulter cannot be turned one side or be forced out of its place.

The Cutter, Coulter or Fin Cutter and Wheel are applicable and are attached when desired to all sizes of plows, excepting the very small: either *one* or *all* are used upon the same plow.

**Remarks on Plowing.**

From the complicated structure of the plow, and the manner in which circumstances oblige us to apply the draught to the implement, some misconceptions have arisen as to the true manner of applying and the operation of the draught. Oftentimes too little is understood of the true principle of draught to enable the plowman to attach his team and arrange the clevis so that the plow will work natural and easily.

In illustrating the operation of the draught upon the plow and the proper manner of applying it, a reference to the plate at commencement of this work, will render the subject more intelligible.

Let *b* represent the forward end of the beam, and *c* the centre of resistance on the plow, which may be assumed at 2 inches above the plane of the base of the plow, *d e*, though it is liable to constant changes from inequalities in the soil.

We have first to consider the nature of the form of those parts through which the motive power is brought to bear upon the plow. It is evident that the motive force acts in a direct line from the hook or ring at the shoulder of the animal, to the centre of resistance, and were it not for considerations of convenience, a straight bar or beam lying in the direction *c b* and attached firmly to the body at *c* would answer all the purposes of draught perhaps better than the present beam. But the draught not

being the end in view, but merely the means by which the end is accomplished, the former is made to subserve the latter; and as the beam, if placed in the direct line  $c$  to  $b$ , would obstruct the proper working of the plow, we are constrained to resort to an indirect action to arrive at the desired effect. This indirect action is accomplished through the medium of an angular frame-work, consisting of the beam and the body of the plow, so strongly connected together as to form an unyielding structure. The effect of the motive force applied to the frame-work at the point  $b$  and in the line of  $b$  to  $f$ , produces the same results as if  $c$   $b$  were firmly connected by a bar in the position of the line  $c$  to  $b$ , or as if that bar alone was employed.

The average length of the trace chains being 10 feet, including all that intervenes between the clevis of the plow at  $b$  and the horse's shoulders; let that distance be set off in the direction  $b$  to  $f$ , and the average height of the horse's shoulders where the chains are attached, being about 4 feet 2 inches, let the point  $f$  be fixed at that height above the base-line  $d$   $e$ . Draw the line from  $f$  to  $c$ , which is the direction of the line of draught acting upon the assumed centre of resistance,  $c$ ; and if the plow is in proper trim it will coincide also with the ring of the clevis;  $e$   $c$   $f$ , being the angle of draught, and equal to  $20^\circ$ . It will be easily perceived, that, with the same horses and the same length of hames, the angle  $e$   $c$   $f$  is invariable; and if the plow has a tendency to rise at the heel, or "run on the point," under this arrangement, it indicates that the ring at  $b$  is too *high* in the clevis. Shifting the ring one or more holes downward will bring the plow to work evenly upon the base of the landside, or "work flat."

On the other hand, if the plow has a tendency to rise at the point of the share, the indication from this is, that the ring  $b$  is too *low*, and must be remedied by raising it one or more holes in the clevis. Suppose, again, that a pair of taller horses were harnessed in the plow, the draught chains, depth of furrow, and soil,—and, by consequence, the point of resistance  $c$ ,—remaining the same, we should then have the point  $f$  raised suppose to  $f'$ ; by drawing the line  $f'$  to  $c$ , we have  $e$   $c$   $f'$  as the angle of draught, which will now be  $22^\circ$ ; and in this new arrangement, the *ring* is found to be *below* the line of draught  $f'$   $c$ , and if the draught chains were applied at  $b$ , in the direction  $f'$   $b$ , the plow would have a tendency to rise at the point of the share, by the action of that law of forces, which obliges the line of draught to coincide with the line which passes through or to the centre of resistance; hence the ring  $b$  would be found to rise to  $b'$ , which would raise the point of the share out of its proper direction. To rectify this, then, the ring must be raised in the clevis by a space equal to  $b$  to  $b'$ , causing it to coincide with the true line of draught which would again bring the plow to work evenly on the base of the landside, and "run flat."

The foregoing remarks are copied from Stephens' Book of the Farm with change of phraseology to adapt the different names and terms to those used and understood by the plowmen of this country, by which and other remarks added below it will be observed, that the plowman, as well as the maker of plows, need understand his profession in order to make good work with ease to himself and team. If the power (or team) is not rightly applied, good work cannot easily be effected, for if the plow inclines in or out of the ground too much, or takes too wide or too narrow a furrow slice, the plowman must exert force to direct it properly, in addition to

that required to overcome the obstacles and inequalities in the soil, but if the power be rightly applied, the plow will move so accurately as to perform good work with more ease to both plowman and team, and in soils free from obstructions, even without being "held" or guided.

To effect a proper horizontal movement, the clevis at *b* or draft-rod (if one is used instead of a clevis,) must be adjusted and confined at that point, (moving it to the right or left if necessary,) that will cause the plow to take the proper width of furrow slice, which should be, in sod, wider or narrower according to the depth of furrow, or rather the thickness of the furrow slice required; for as the thickness is increased so also must be the width, in order to turn it easily and perfectly over, particularly when the furrow slices are required to be laid over level and side by side. The proportion in ordinary sod should be 6 by 12 inches or 7 by 13 inches, and so on. In determining the width of furrow slice, some regard must be had to the strength of the particular sod to be turned; for the same plow will turn over a wider slice in a strong, stiff sod, than when running in a more tender sod, which is more easily broken, or will cripple and double when raised to a perpendicular position, by the mould-board, thus only doing the work called "cut and cover." When the slices are required to be laid inclining and to lap, each one upon the other preceding, the proportion of width should be less, say, about 6 by 10 inches; the narrower the slice in proportion to the depth, the more steep will be the inclination of the slice as it is lapped on the preceding one.

The cutter, simple as it appears to be, is a very important appendage to the plow, as it cuts the furrow slice off from the main land with great ease and precision, requiring much less power of team than when the slice is broken or torn off (which is always done when a cutter is not used), and the precision adds much to the quality and beauty of the work, leaving the slice true and straight upon the edge. Much depends upon the cutter being properly formed and set so as to cut the furrow slice in the proper form and shape to turn and lie as required. The cutter can be raised or lowered at pleasure, to cut shallower or deeper, or it can be detached entirely, which always should be done in plowing rocky, or very rough or rooty land. The cutter is very useful at the South in cutting up the crab, and other tough grasses, thus enabling the plowman to cover them up completely with the soil.

In order to turn the furrow slice completely over, and do what is termed "flatwork," or "planing," the cutter should pass down from the centre of the beam, about three inches forward and above the point of the plow, *standing out* in a line with the face of the land-side, so that by placing a straight edge along the face of the landside, and forward past the cutter, it shall touch the point of the cutter; this position causes it to cut under the main land a little, and leave the furrow slice bevelling upon the edges, and when turned over, the upper corner will have receded a little from the main land, and admits the succeeding slice to drop in *flat* by its side.

To lay the furrow slices inclining, and lap them one upon the other, the cutter should pass down perpendicularly from the land side of the beam in such a way as to cut the edges of the slice at right angles with the sides. Whether the cutter be attached at the side or through the beam, it can be bent so as to stand in either position.

Many advantages are realized in the use of the wheel upon the plow, particularly in turning sod ; it serves as a gauge to regulate the depth, and can be raised or lowered to conform to any depth required. It admits of the plow being drawn by a proper length of chain, in any soil, with which, and the aid of the wheel, the plow moves steadily and accurately along, being less affected by any irregular movement of the team, performing the work more uniformly and with greater ease, both for plowman and team. The plow is thus drawn at a convenient distance from the team.

Figure 6.



### ***Description of Small Plows,***

of different forms and sizes, used for various purposes ; to wit :

No. 14.—A light single one horse or mule plow, calculated to carry a wide furrow in a light or sandy soil, and well adapted to Northern and Southern culture. The mould-board is longer and more curved than other kinds of plows, and works and pulverises the soil admirably.

No. 15.—A single horse or mule plow of same construction as above, but one size larger.

No. A 1.—A light one horse or mule plow better calculated for a loamy or clayey soil. It is much used among cotton and corn, as well as for furrowing out or drilling.

No. A 2.—A single horse or mule plow, same construction as the above but one size larger.

No. A 3.—A two horse stubble plow. It is much used at the North for general plowing, and highly approved for breaking up the rice lands at the South.

No. 1 B.—A large one horse plow ; is frequently used with two horses, and for the same purposes as No. A 3.

No. 2 B.—A small two horse plow, same as the above, but one size larger. It is much liked at the North and South.

Eagle No. 0. is a size suitable for two horses at the South or one at the North, as is sometimes used with two horses at the North, it is of very easy draught and possesses all our latest improvements in form.

### **COTTON PLOWS.**

DAVIS 6 INCH.—A light one horse or mule plow, particularly designed for the South.

DAVIS 7 INCH.—Of nearly same construction, but a size larger than the above.

### RICE TRENCHING PLOW.

This plow is made from a pattern furnished by an eminent Southern planter. It will do the work of many hands with hoes, in trenching a field for the rice crop, and will be found a great labor saving implement for the South. It is an excellent implement, also, for opening drills for corn or cotton, and for various root crops at the North.

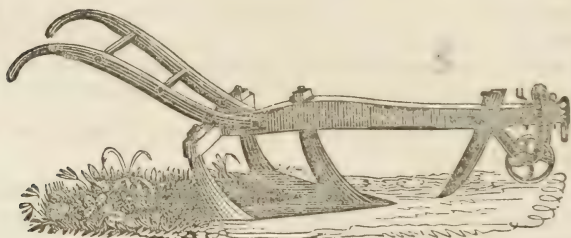
### RIDGING OR DOUBLE MOULD PLOWS.

**No. 1 DOUBLE MOULD BOARD.**—A light one horse plow, used for opening drills to plant potatoes, corn, &c. In plowing out between narrow rows, it throws the dirt both ways to the plant, and thus does the work of two plows. It is also very useful in digging potatoes. Indeed, it is a very convenient implement for various kinds of work, and should always be kept on the farm and plantation.

**No. 2 DOUBLE MOULD BOARD.**—Of same construction and use as the above, but one size larger.

### PARING PLOW.

Figure 7.



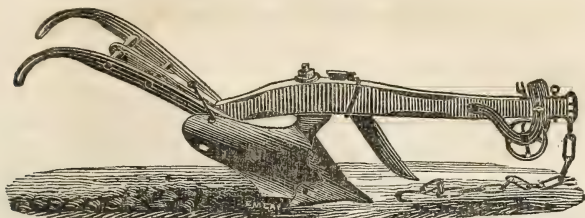
The above plow is used for paring turf lands preparatory to burning. The share is thin and flat, made of wrought iron, steel-edged. It has a lock-coulter in the centre, and short coulters on the outward edge of each wing of the share, cutting the turf as it moves along into two strips about one foot wide, and as deep as required.

After the turf is pared off in strips, men follow with sharp spades and cut it into suitable lengths, say of two or three feet. These pieces they then throw into heaps, after drying of which they are burned, and the ashes spread broad-cast on the land. Paring and burning is a very ameliorating process for stiff clay soils; it changes their mechanical texture almost entirely, and renders them friable and suitable for cultivation.

### Description of Side-Hill or Swivel Plow.

Of the above plows we make five different sizes. They are so constructed that the mould board is easily and instantly changed from one side to the other, which enables the operator to perform the work horizontally upon side-hills, going back and forth on the same side, and turn-

Figure 8.



ing all the furrow slices with great accuracy downward. This prevents the washing of the soil by heavy rains, to which all side-hills are more or less liable when plowed as level ground. They are much liked at the South for *horizontal* plowing; for by this system of turning and laying the soil, it is prevented from being washed into those deep gullies, so destructive to the general face of the country. They are also highly useful, and by many much approved for level plowing, as this leaves the field without any *centre dead* or finishing furrow; nor does it make banks or ridges by turning two furrows toward each other. They are likewise useful in enabling the plowman to turn the furrow *from* his walls and fences. Another advantage, they save much trouble in enabling the team to turn short about at the end of the furrows, instead of obliging it to travel across the wide ends of each land in the field.

**No. 0. Side-Hill.**

A light one-horse or mule plow, more particularly designed for *horizontal* plowing at the South.

**No. A 1. Side-Hill.**

A light or medium sized two-cattle sod or stubble plow.

**No. A 2. Side-Hill.**

A large two-cattle plow—is sometimes used with three or four horses, according to the nature of the soil.

**No. A 3. Side-Hill.**

A large four or six-cattle plow, made very strong. It is suitable for heavy rugged farm or road work.

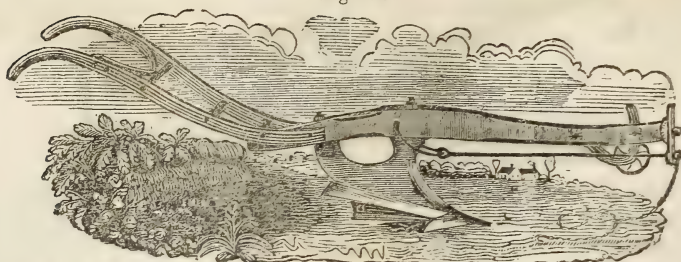
**No. A 4. Side-Hill.**

A heavy road plow. It is made very strong, and is especially designed for the roughest road work.

With wheel and cutter the medium sizes are highly approved for turning over mowing land for the purpose of re-seeding in the Autumn, as with the cutter, they lay the furrow slice *flat* and with great uniformity, avoiding the *centre* and bank furrows and leaving the land the same general level as before plowing.

## SUB-SOIL PLOW.

Figure 9.



We manufacture three sizes on the precise principle of the most approved Scotch Sub-soil Plow, one of which we imported from Scotland in 1840. By modifying and simplifying its construction, at the same time making some important improvements, we are now supplying the farmers and planters of this country with plows lighter, and better adapted for our soils, and of equal capacity, at a much less price than the Scotch Plow. The Plow imported by us, we believe to be the first real Sub-soil Plow ever in this country.

They have since been used in different sections of the United States, with great satisfaction; and the demand is constantly and rapidly increasing. These Plows are used by following directly after the team which turns up the surface soil, and in the same furrow. This is of great advantage to the crops, both in dry and wet land. In the former, the sub-soil being deeply broken up, and well pulverized, the moisture is retained much longer than it otherwise would be, and the roots of plants can descend much lower and wider for their food, while in the latter the excess of moisture filters below and is readily carried off.

### No. 0 Sub-soil.

A one horse size at the North, and is used with two mules at the South. It will break and pulverise subsoil any required depth to nine inches below the previously turned furrow.

### No. 1 Sub-soil

Is the medium size and is mostly used in ordinarily clear soils with two, three, and sometimes four cattle.

### No. 2 Sub-soil.

A large plow. It will break and pulverise the soil any required depth to eighteen inches.

### No. 3 Sub-soil

Is about the same size as No. 2, but is used with either a single or double wing point, and with an inclined plane to raise the soil upon one or both sides at the same time.

We recommend the use of the draft-rod on all sizes of the Sub-Soil plows, as we consider them almost indispensable in enabling the off animal to walk and the plow to work in the same furrow.

## DESCRIPTION OF HARROWS.

Of these there are many kinds. Of the common triangular form we make various sizes, from the light one horse up to the large four cattle harrow.

### GEDDES HARROW.

Figure 10.

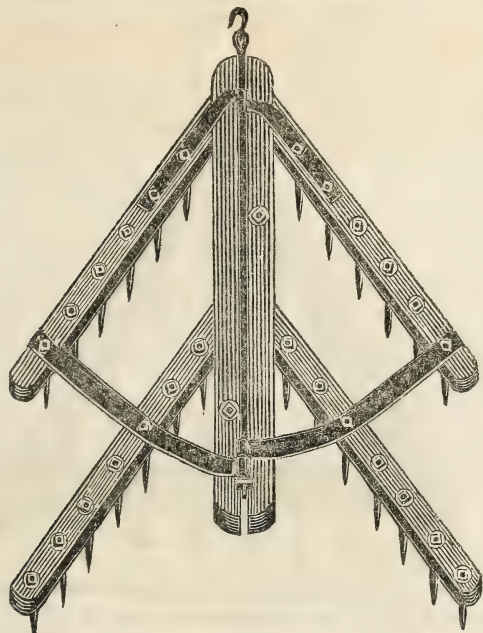


Fig. 10, is the Geddes Folding Harrow, which upon the whole we esteem the best. Some of the larger sizes are so constructed that the front and rear parts can be detached, forming two single harrows, which can be used separately when desired.

The two side frames are joined together by hinges in such a way that the harrow works the surface of uneven lands quite equally, and when one half is folded over upon the other, it is easily transported about the farm.

The teeth are made of the best Sweedes iron, steel pointed, and the upper end is drawn to fit a mortice made tapering from the lower to the upper side of the timber, with a screw upon the upper end of the teeth, and are made fast by nuts being screwed close down upon iron washers, which prevents all liability of the teeth to become loose and drop out as in most kinds of harrows.

The Geddes Harrow is superior to the square harrow, as it draws from one centre, without an uneasy and struggling motion, and of course easier for the team. Either part is easily lifted when in motion to let off any vegetable matter which may have collected among the teeth.

Sufficient attention is not paid to harrowing. It is the next most im-

portant operation after plowing. The harrow should run from four to six inches deep, cutting up all the lumps, and leave the ground in a finely pulverized state. The price of these harrows varies from \$8 to \$14. They have from fourteen to thirty teeth.

**Triangular Folding, or Chandler's Harrow.**

Figure 11.

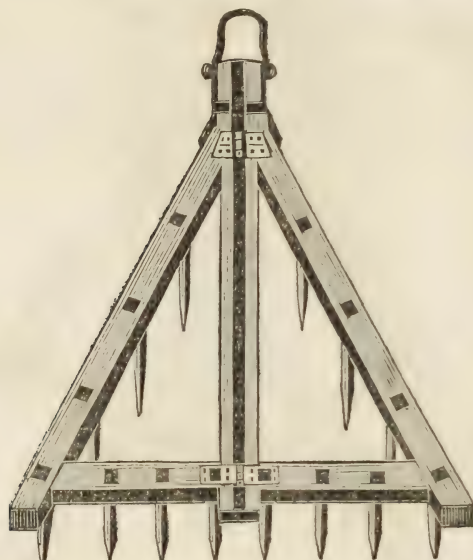


Fig. 11 is also a folding harrow with teeth constructed like those in Geddes Harrow, made of heavier materials, and is very strong and suitable for very rough soils.

Figure 12

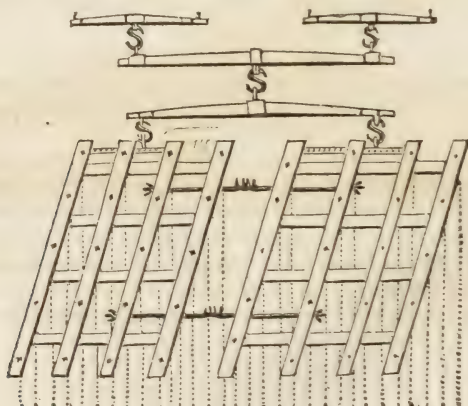


Fig. 12, the Scotch harrow, which may be used single or double. Prices vary according to the size.

We make this kind only to order.

## DESCRIPTIONS OF CULTIVATOR.

The cultivator is a great labor saving implement, it was first used for stirring the earth between corn and other crops in rows. They are now found to be highly useful in mixing fine manures with, and pulverizing the soil after plowing. It leaves the soil much lighter and in better condition to receive the seed than when the harrow only is used.

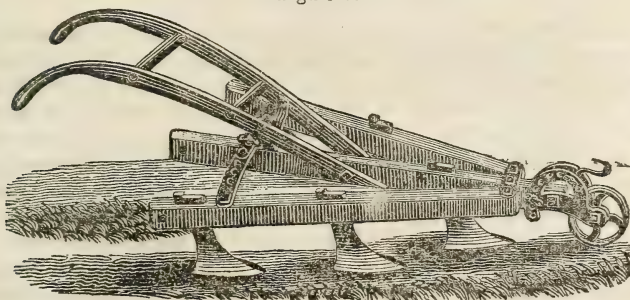
It works admirably for covering grains sown at broad-cast, it covers it at a more *proper* and *equal* depth than the plow, and in one fourth the time, and much more perfectly than the harrow.

There are various forms of teeth, some to enter and stir the soil deep, others broad and flat to simply skim the surface and leave the weeds cut up and exposed to the sun, some with reversible teeth; some with scarifiers, and some with harrow teeth, and as we now make all teeth except the harrow form to fit the same size and form of mortice, the farmer can, by purchasing different forms of teeth, use them in the same frame-work.

They are made to expand and contract to conform to width of rows, &c. Some are made having the hindmost teeth so formed as to turn the earth towards the plants, and by shifting them from side to side, turn it from them, as is required.

### Improved Expanding Cultivator.

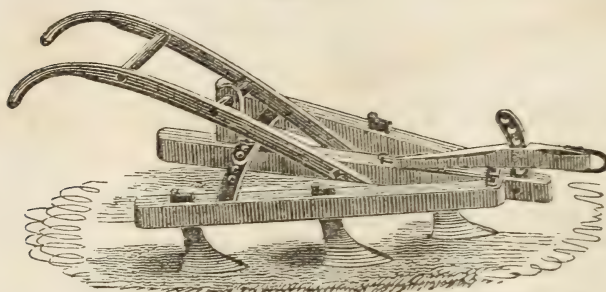
Figure 13.



The wheel Fig. 13, is a late invention, and is found to be a great improvement, as it causes it to move steadily, and easily, and assists the operator in getting it around the ends of rows and obstructions in the field.

### Common Expanding Cultivator.

Figure 14.



### Universal Cultivator.

Figure A.

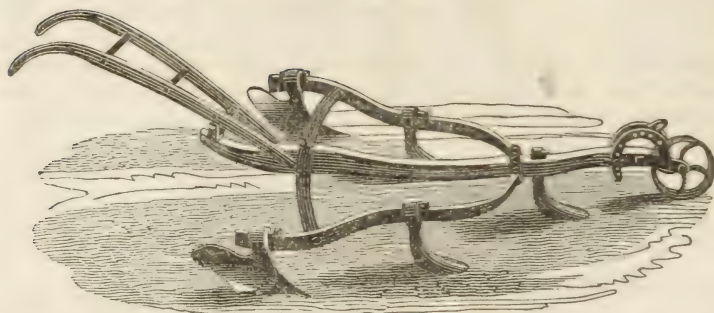


Fig. A. represents a Cultivator we have recently constructed. It is made longer and all of iron except the centre beam and handles; the side beams being of wrought iron *so curved*, that as they are expanded or contracted, by loosening the iron key that confines each tooth in its place they are each moved forward or back to a point that will again cause them to work parallel with the centre beam and at equal distances from each other. To these are fitted several sets of different formed teeth and scarifiers, of wrought and cast iron, and are sold with one or more sets.

There is also one pair of teeth calculated to work in the rear, represented by the Figure, which may be used instead of the common teeth: they are in form like small plows, turning the furrows in opposite directions, and fitting alike both side beams; they may be placed by changing to turn the furrows to or from the centre, or rows of vegetables. If the forward teeth are used at the same time, they finely pulverise the soil, and if the plows are set to turn inwardly, it forms a beautiful light bed in which to plant any kind of seeds, and for this purpose operates even better than a Barring plow. The farmer or planter can have any form of wrought teeth they may desire attached to them by their blacksmith, as the manner of fitting them to the beams is very simple and easy.

## Hand Cultivator.

Figure 15.



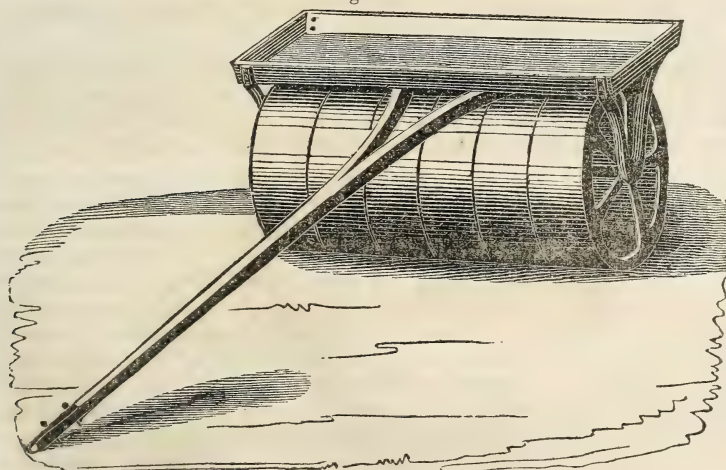
This is made entirely of iron except the handle, and expands from 10 to 18 inches. It is a very useful implement in garden culture, and is often used in fields, among rows of carrots, beets, onions, &c. It cuts up, and leaves the weeds exposed, and stirs the earth very thoroughly.

The operator with his hands behind, clenches the cross handle and walks easily and leisurely forward between the rows, and performs the work better and faster than many men with hoes, leaving the ground well pulverised and the weeds cut up. This being so expeditiously done it can be done oftener to advantage.

**LANGDON'S CULTIVATOR OR HORSE-PLOW.**—This in reality, is a plow with a light, wide, flat share, sharp at the edges, and coulters on the mould-board. It is used for running between the rows of different crops, to cut up the weeds and loosen the soil. It is an excellent implement also for digging potatoes. It is only recommended for light soils free from stones.

## Field Roller.

Figure 16.



This is an important implement, and is fast coming into general use. It crushes all sods and lumps that remain on the top of the ground after

the harrow has passed and forces small stones down even with the surface, and thus renders the field smooth for the cradle, scythe and rake; presses the earth close about the seed and secures a more sure and quick germination.

Its greatest benefits are realized when used on such light sandy and porous soils as are not sufficiently compact to hold the roots of plants firmly and retain a suitable moisture: on such lands they are invaluable and in all cases their use has greatly increased the product. Much benefit is undoubtedly found by compressing the surface of such light soils, by preventing the escape of those gases from the manure so essential to vegetation and so easily extracted by the sun and winds.

Very great advantage is gained by rolling early in the spring (while the ground is yet soft,) those lands which by "heaving" pull to pieces and displace the roots of grain sown the previous autumn, and grasses, as the heavy roller presses the roots and earth together and back to their proper position, when vegetation goes on again, and thus preventing what is termed "winter-killing."

Rollers are variously made of wood, stone, and iron. Those of iron are most desirable, being more easily made than of stone, and not subject to decay like wood.

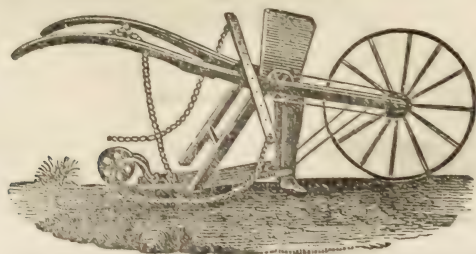
Fig. 16. represents the most approved kind, constructed wholly of iron except the tongue and box, which are of wood. These rollers are made either 22 or 30 inches in diameter, in separate sections, each one foot long, placed on a wrought iron arbor on which they turn independently of each other, so that in turning round they are not liable to leave the ground uneven. They are generally used with either four or six sections. If four only are required, thills or shafts may be substituted for the tongue, and drawn by one horse, or both may be used alternately according to the team.

The box is attached to receive stones &c. picked up on the field, and for giving weight to the roller according to the work required.

P. S. For distant transportation, the iron sections and standards to which the box and tongue is to be attached, are furnished to order either with or without wrought iron arbor, by weight, to which the box and tongue or thills can be attached by a wheelwright or carpenter.

### Improved English Brush Seed Sower.

Figure 17.



This machine with all its essential parts, has been long in use in this

country and in England, and is found to be the only one that plants all the many and variously formed small seeds with certainty and precision. The cut represents the machine with the hopper and apparatus for sowing the small garden seeds, such as onion, turnip, carrot, parsnip, beet, &c. and also millet and other small grains in drills. It is easily arranged to plant a greater or less quantity, as may be required.

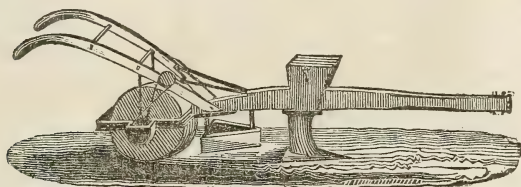
We have lately invented and now make another hopper, which fits in the place of the present when removed, and with different dropping fixtures, for planting peas, beans, corn, &c. in drills, or in hills from 6 inches to 2 feet apart.

This hopper can be had with the machine, or can be obtained afterwards, and every part will fit; it is but a moment's work to exchange one for the other: in this too, the quantity of seed planted is easily controlled.

The operator simply moves forward as with a wheel-barrow, when the drill is opened, the seed deposited, covered, and the soil compressed at a single operation. An acre with rows 2 feet apart is easily sown in three hours. *Directions for using accompany each machine.*

### Bachelder's Corn-Planter.

Figure 18.



This is one of the best machines we have yet seen for planting corn. The seed is put into the hopper above the beam, and as the horse moves along, the share below opens the furrow; the corn is then dropped by arms moving horizontally. These arms have holes in them of a proper size to receive any required number of grains, and as they pass in and out of the hopper, the holes are sure to be filled with the seed, which as surely drops into a tube conducting it to the bottom of the drill made by the share, which is so formed that it passes under the surface at any required depth, and deposits the grain without turning over the earth. A triangular iron follows to remove all lumps and stones, and a roller to compress the earth over the seed. The dropping of the seed is always visible to the operator, and thus ensures his work being perfectly well done. The arms are made to drop the corn nearer or farther apart by different sized wheels fastened on the crank, moving the arms quicker or slower as required. Those usually made here drop from two feet to four feet apart, as wished. The machine requires a small horse or mule to draw it, and with a boy to tend it and drive, will plant two to four acres per day, according to the width of the rows apart.

### ***Hay, Straw, and Corn Stalk Cutter.***

There is great saving in the cutting of corn stalks, hay, and straw, in two ways. The animals do not waste it by drawing it out of their mangers, and trampling it under their feet, and time and labor are saved them in masticating. They obtain their supply of food readily, and then lie down to digest it. Fermentation also develops the nutritive matter and leaves much less work for the stomach to perform, and this, by saving muscular exertion, leaves more strength with the animal to be expended on his ordinary work. The same principle holds with milk cows, sheep, &c. If the food be given to them in a form more carefully adapted to assimilation in the animal system, the greater product of milk, wool, flesh, &c., they can yield from the same quantity. Cutting, bruising, grinding, fermenting, and cooking the food, all tend much to fit it for easy and rapid digestion, and whenever it can be thus prepared, without too much expenditure of labor, it should be done. By adopting a mixed food, much of the coarser products of the farm can be worked up, which are now suffered to be added to the manure heap. Indeed, scarcely any of the vegetable productions of the farm need be suffered to run to waste, till they have first contributed all the nutriment they contain to the support of animal life. Cutting hay is like making mince meat. There is nearly the same nutriment in the tough pieces, and even gristle as in the tender ones. Now chop these up fine, and properly cook, and season them, and the dish is eaten with peculiar relish, easily digests, and goes twice as far as in the ordinary method of taking the meat in slices.

In feeding hay and straw it would be well to wet it slightly, and season it with a little meal.

It is now generally conceded that for cutting hay, straw, and stalks, those machines having knives set upon the circumference of a cylinder, and cutting against a roller of raw hide are the best yet introduced; see cuts B. and No. 19: the work is easily and rapidly performed by simply turning a crank, and the machine is a perfect self feeder without any extra and complicated fixture to perform that part of the work.

For this kind of cutters, *crooked* or *spiral* knives have been mostly used, which could not without much difficulty be properly sharpened or replaced except by the maker, which subjected purchasers to much inconvenience and expense; and as the knives are confined to the cylinder by some makers, by means of flanges, sloats and screws, the knives are weakened, the screws are liable to be lost or injured, and the flanges prevent the knives being placed upon the cylinder so near each other as to cut the straw &c. as short as is by many thought to be necessary.

We have recently made important improvements in the construction of this kind of machines, by using straight knives confined by a simple cap and placed in such a manner upon the cylinder that they perform the work in every respect as easily and expeditiously as the spiral knives. Thus improved, our machines possess several very important advantages.

*First.* The knives being straight as in Fig. B, are readily ground or sharpened by the purchaser or operator.

*Secondly.* They can be replaced by a common blacksmith when worn out or broken.

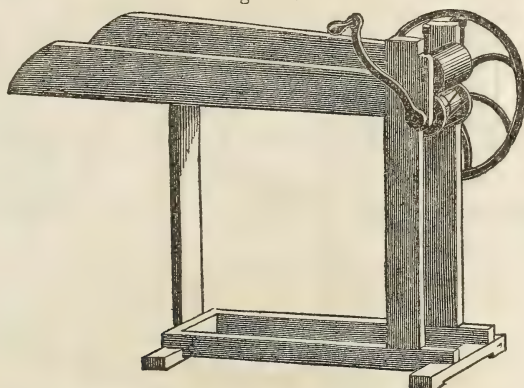
*Thirdly.* The knives are made heavier and attached to the cylinder without sloats or screws; confined at both ends and supported in the middle in a manner much stronger and less complicated, thus leaving the strength of the knives unimpaired and avoiding the great liability to twist, cripple and break.

*Fourthly.* The manner of attaching the knives to the cylinder admits of their being placed near each other, so as to cut as short as is desirable, and,

*Fifthly.* The hide roller when used with straight knives properly set, will last much longer than when used with the spiral knife.

We have the same kind made very large and very strong, and rigged to go by horse power. One has cut a ton of hay in 50 minutes, by a fair trial, and may be calculated upon for cutting a ton any time in an hour and a quarter.

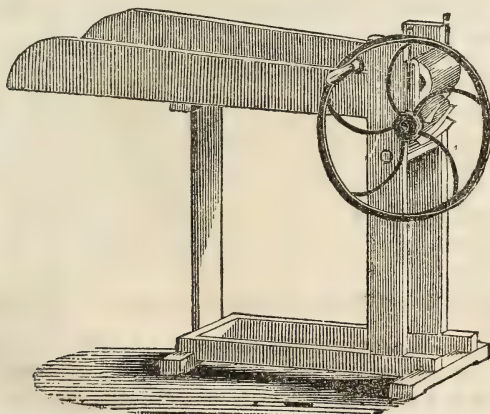
Figure B.



**TOWER'S MACHINE** has also straight knives, and is a very strong, substantial article, and is also represented by Fig. B.

**Stevens' Spiral Corn Stalk, Hay, and Straw Cutter.**

Figure 19.



We have also Stevens' cutter, with spiral knives, which has a high reputation. Represented by Fig. 19.

### ***Cylindrical Straw Cutter.***

Figure 20.

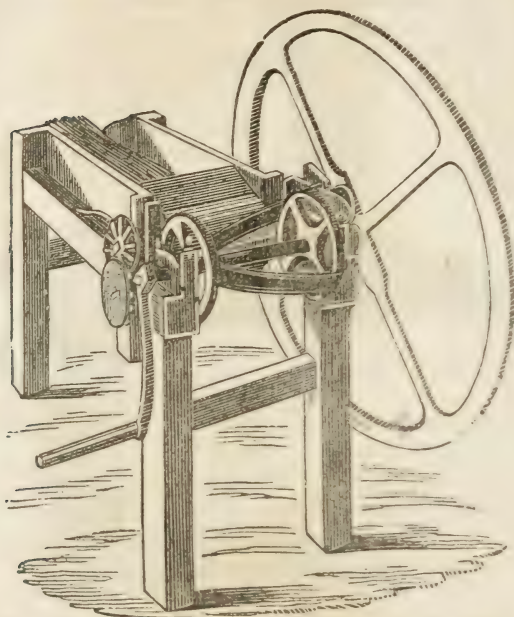


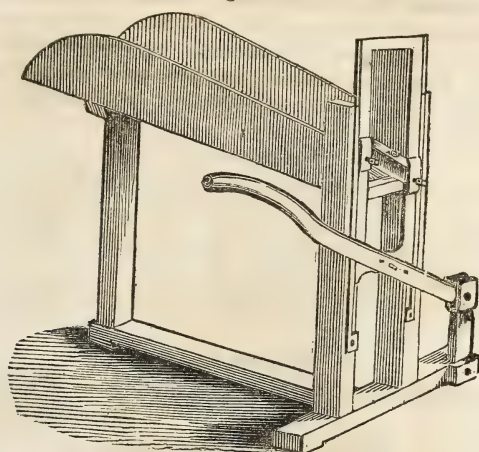
Fig. 20, Sinclair & Co's Cylindrical Straw Cutters are self-feeders, knives are of spiral form, and act on a bed-steel in such a manner as to cut with great ease, without a very keen edge; many thousand bushels have been cut with them without sharpening the knives. They can be regulated to cut longer or shorter; are a heavy, strong machine, and have been much used at the South.

There are four different sizes, having 9, 11, 14 and 20 inch knives. The larger sizes are rigged to be worked by power, and the smaller by hand. 20 inch Cylindrical Straw Cutters suited to horse or steam power, capable of cutting from 1500 to 2000 bushels per day, \$75. Extra knives per set, \$8. 14 inch Box same construction, suited to manual or horse power, \$45. Extra knives per set, \$5. 11 inch Box same construction, suited to manual power, \$30. Extra knives per set, \$4. 9 inch Box same construction, \$25. Extra knives per set, \$3.

### ***Common Hand Straw Cutter.*** (Fig. 21.)

With these the straw is moved up by hand, and the knife is used by hand-lever. Of course one can cut the straw, &c., as long, or as short as he pleases. It is a very simple machine, and easily kept in order; though

Figure 21.



when more than one or two animals are fed, we should recommend other machines in place of it.

### Ruggles, Nourse & Mason's Vegetable Cutter.

Figure 22.

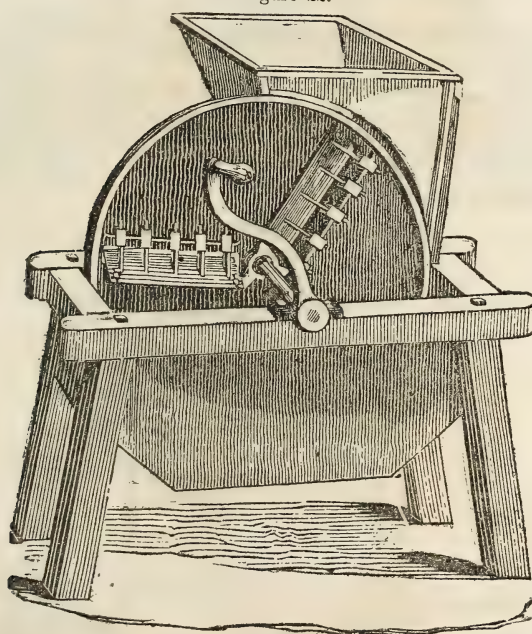


Fig. 22 shows Ruggles, Nourse and Mason's Vegetable Cutter. The cutting wheel is made of cast iron, faced on one side, through which are

inserted three knives like plane-irons. These cut the vegetables into thin slices with great rapidity, and then by cross-knives they are cut into slips of convenient form and size for cattle or sheep to eat, without danger of choking. The pieces after cutting lie loosely and angingly together, and can easily be taken up by the animal. This machine will cut 60 bushels per hour.

#### **Whitman's Threshing Machine and Separator.**

We are agents for the sale of these celebrated machines, which we recommend with great confidence, and we regret that we have not a cut to represent them in this work.

They are sold separately or connected, and also with or without his highly approved horse power.

#### **Clover Mills.**

These will clean from 5 to 15 bushels per day. Furnished to order.  
Price, \$35 00 to \$65 00.

#### **Rice and Coffee Hullers.**

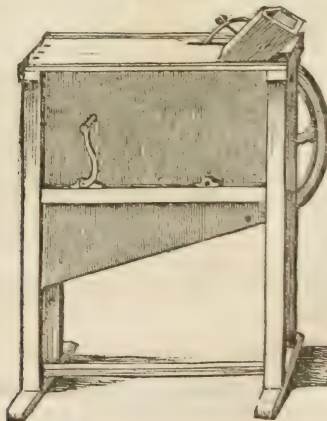
Hulls from 2 to 10 bushels per hour. Furnished to order. Price, \$80 00 to \$200 00.

### **CORN SHELLERS.**

They are of various patterns and prices. Those most in use by hand power, are Clinton, and Burrall's, Fig. Nos. 23 and 24. The first is made single or double: the double kind shells two ears at the same time. The single kind will shell at the rate of 100 to 125 bushels per day, and the double kind twice that amount. We furnish to order the Clinton sheller to operate by horse or other power. Both kinds are adjustable to the size of the ears of large or small corn.

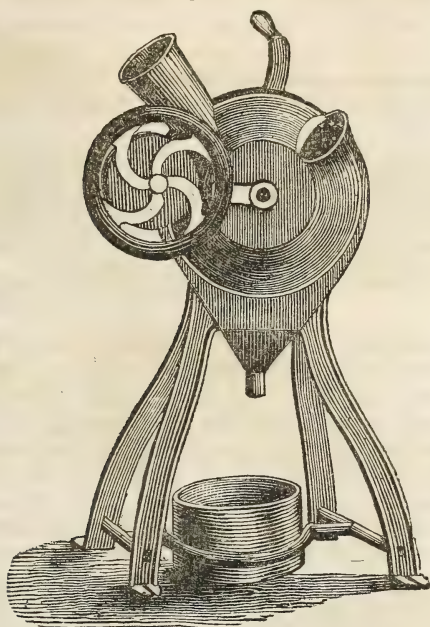
#### **Clinton Corn Sheller.**

Figure 23.



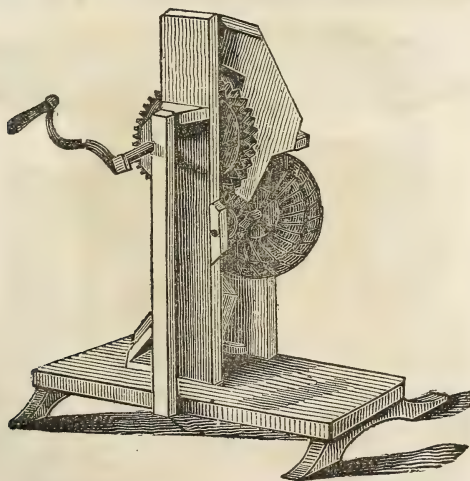
**Burrall's Hand Corn Sheller.**

Figure 24.

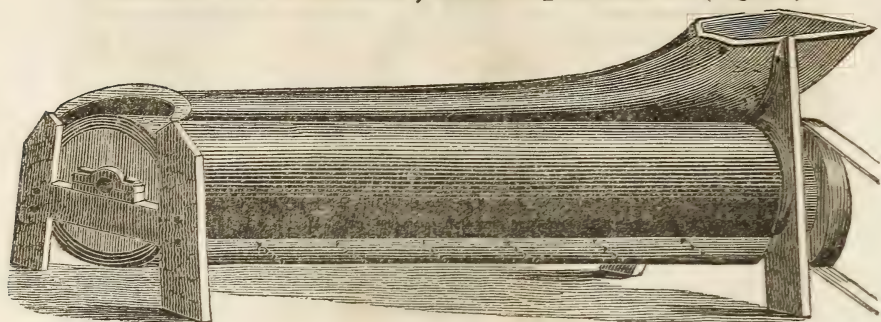


This is a recent improvement: it separates the corn from the cob in shelling. Will shell the same quantity per hour as other hand-shellers. It takes but little room and works beautifully. It is made of all iron.

**Warring's Hand Corn Sheller. (Fig. 25.)**



This is a kind of sheller much used, and is a very efficient hand machine.

**Smith's Corn Sheller, and Separator.**—(Fig. 26.)

This machine consists of a horizontal toothed cylinder 6 feet long, and one foot two inches in diameter. The ears of corn in the operation, are confined to a part of the upper and rising side of this cylinder, by means of a cast iron concave extending the whole length of the machine, and being shovelled or let in the machine at one end, they are driven through, and the cobs discharged at the opposite end, while the grain falls below, being admitted on either side of the cylinder. The operation is governed by elevating or depressing the discharge end, which causes the machine to discharge the cobs fast or slow, and of course operates more or less upon them; thus securing to the operator the power of finishing his work. This machine is capable of shelling two hundred bushels of ears per hour. Upwards of one hundred of them have been already sold, and they may be seen at work in New York, New Orleans, and other Northern and Southern cities and towns, where they have given great satisfaction. They are very simple and strong in their construction. Price, \$50 00.

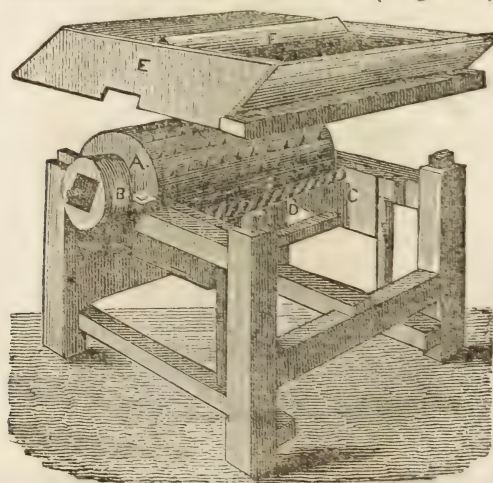
**Goldsboro's Corn Sheller.** (Fig. 27.)

Fig. 27, represents Goldsboro's Patent Cylindrical Corn Sheller and Husker, for horse power. This machine is worthy the attention of extensive corn growers; they are capable of shelling 130 bushels per hour, and are warranted to shell 1200 bushels per day, without any extra effort; they break no corn and leave none on the cob. This machine will also husk and shell about half the above quantity in a day. Price, \$40 00.

**CORN AND COB CRUSHERS.** (Fig. 28.)

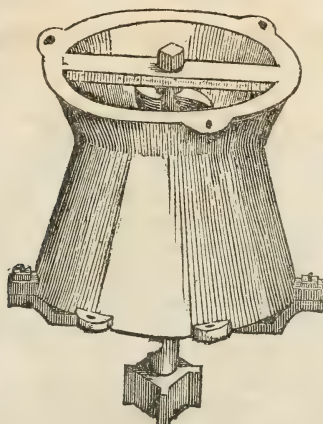


Fig. 28, is much used at the North and West for the purpose of cracking or crushing the corn and cob together preparatory to grinding between mill stones. They are made to run either way, (right or left) to conform to the power by which they are driven.

**SINCLAIR'S CORN AND COB CRUSHER**

Figure C.

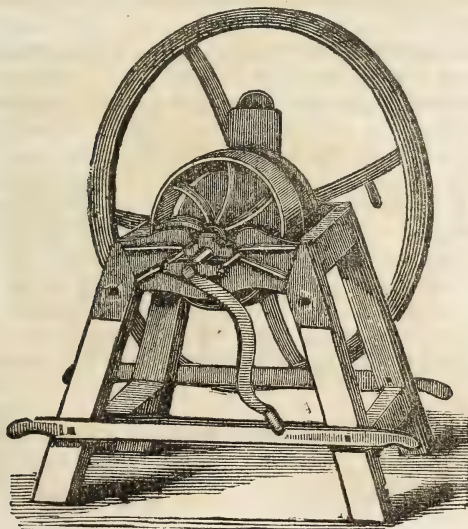
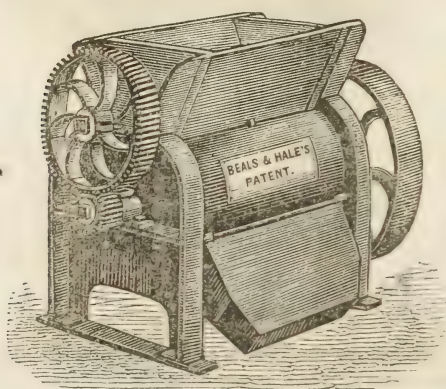


Fig. C is admirably adapted for plantation use ; the construction is very simple, compact, and not easily put out of order. The grinding plates are made of the hardest composition metal, which will last from two to three years. After they are worn smooth new plates may be substituted without difficulty ; on the axle is attached a strong spiral knife, which cuts the cob in small pieces, preparatory to entering the plates. Price with one set extra plates, \$30,00.

### Beal & Hale's Patent Improved Corn Cracker,

Figure D.



For cracking corn and cobs previous to passing through mill-stones. For grinding the same suitable for provender. And also, for cracking corn alone, suitable for hominy, and the use of stables.

This valuable Invention surpasses all others of the kind, in Compactness, Durability, Uniformity of its Work, and Economy of power. Its height, when set up for use, is two feet eleven inches, which is much less than the common vertical machine. It will wear (with the same usage) longer than three of those now in use, and grind the cobs and corn to the same degree of fineness, *not leaving the cobs coarser than the corn*, as is the case with other machines, (especially if a little worn,) and this it will do when the corn is damp, or even green, without clogging, which no other mill will do. It is generally driven by a four-inch belt—it may be driven by gear, however, without inconvenience—by which cobs and corn are cracked faster than one run of stones can grind them. It is also asserted by experienced millers that any run of stones will grind at least one-fourth faster and finer when the cobs are cut up in this manner for stable use, at the rate of sixty bushels an hour. Thus making this machine one of Economy in Power, Time and Money, as well as Convenience to the miller.

Mills for like purposes from other celebrated makers furnished at their prices to order.

## Pitts' Corn and Cob Crusher

Is an admirable machine for the South and West, for farm and Plantation use ; it grinds sufficiently fine for feeding to cattle or horses, it is very durable, and the cutting chisels are of cast-steel, and easily ground, which is very seldom required.

## Sinclair & Co.'s Patent Corn Mill

Is admirably adapted for plantation use, or as a Marylander says of them, "every planter having this useful machine becomes his own miller." They grind coarse or fine meal with equal facility, perfection and despatch, at the rate of two and one half to three or four bushels per hour.

When the screen is attached, and fine meal is required to be ground, it will be necessary to drive the Mill by horse-power ; coarse meal for horses may be ground by two men with good success.

The grinding plates, which are made of the hardest composition metal, will last a long time without renewing ; after they are worn smooth new ones may be put on without difficulty. A feeder is attached to the axle which is intended to pass the grain into the plates at regular intervals. The feeder is important, and obviates the difficulty and objection to Cast Iron Mills generally. Price, with one set extra plates, \$40 00.

## Grain, Coffee, and Spice Mill.

This is the best kind of mill for hand use. It is a recent invention. It has a double action, and grinds all kinds of grain in the most perfect manner, except wheat for flouring. It will grind one and a half bushels per hour. It is admirable for cracking corn for hominy, and grinding meal for fowls. Every farmer and planter should have one of them, it being very convenient to do the little jobs of grinding. They are very desirable in large boarding houses and public institutions, for grinding coffee, spices, &c.

Those made to work by horse or water power, grind five to six bushels per hour. The plates will last one or two years, and when worn out with grinding, new ones can be supplied for about the cost of iron by weight.

## Burr Stone Mills.

These mills grind all kinds of grain and wheat for flouring. 12 inch stones grind 2 bushels per hour. Price, \$45 00

16 inch stones grind 3 bushels per hour. " 70 00

20 " " " 4 " " " " 90 00

24 " " " 5 and one half " " 110 00

30 " " " 7 bushels per hour. " 150 00

These mills are ready framed and rigged to attach the power, and are more particularly designed for plantation use at the South.

## Haying Tools.

### Snath and Scythe.

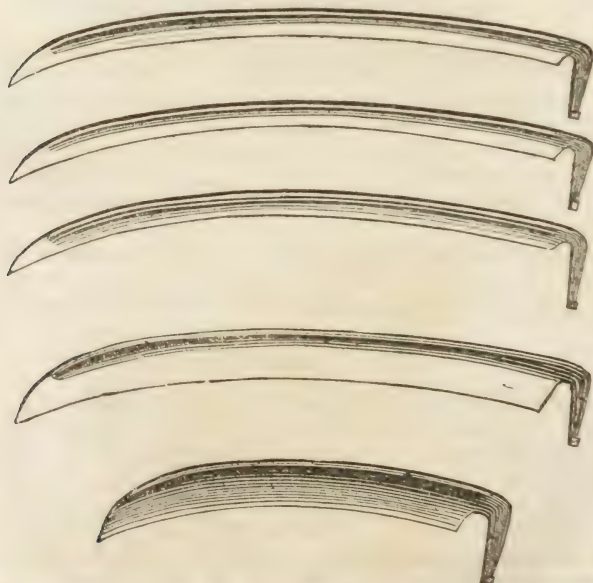
Figure 30.



A great variety of snaths from the different makers and of various qualities, and prices, with and without scythes attached, and some very strong, with two heel rings, for bushes.

### Grass, Lawn, Grain and Bramble or Bush Scythes, OF CAST, SHEAR, AND GERMAN STEEL.

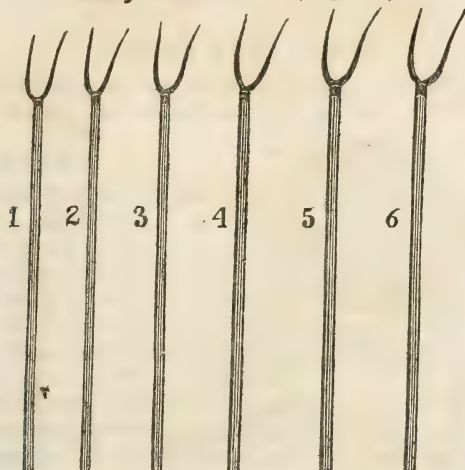
Figure 31.



*By Phillips, Messer, Colby & Co., Farwell, Darling, and other makers.*

Our assortment of scythes is very large : selected from the most celebrated makers throughout the country. We are the sole agents in Boston for the celebrated manufacturers of scythes, Messrs. Phillips, Messer, Colby & Co.

**Hay Forks.** (Fig. 32.)



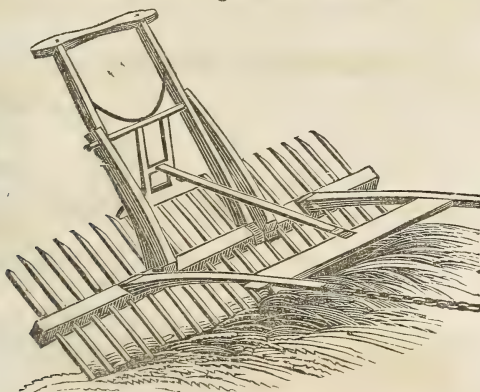
**Partridge's Premium Cast Steel Elastic Forks,  
FAIRBANKS' Do. KING'S Do.**

Our assortment of elastic Cast Steel Hay Forks is also very large, from other most approved manufacturers.

We are sole agents for the sale of the Messrs. Partridge's Cast Steel Elastic Forks, which have far greater celebrity than any forks in use.

***Revolving Horse Hay Rake.***

Figure 33.

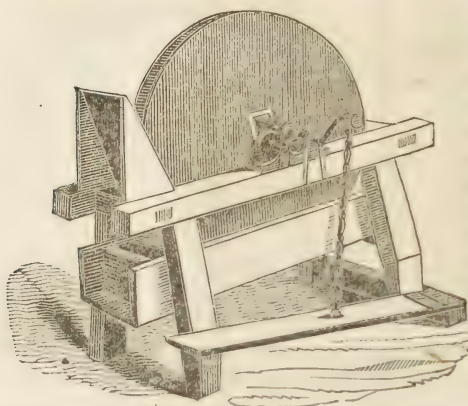


This implement is now in extensive use, and to be appreciated needs only to be used. It is not exaggerating to say that a man, boy and horse will perform in the most perfect manner with this implement, as much work as from 8 to 10 men with common hand rakes. Thus it saves great expense of labor, enables the farmer to get up his hay in advance of storms and showers, to close up his work at proper hours at night, leaving

him leisure to grind his scythes ready for an early start the next morning.

### Hand Hay Rakes

From many different makers, and of various qualities: among them are Wilcox's, Hall's, Dame's, Wood's, Paige's, and others.



### Grindstone.

Fig. 34 represents a stone hung on anti-friction rollers, and is turned by a crank on one side, and a treadle on the other. These are designed more particularly for a mechanic, as he can sharpen small tools without a hand to turn, by the use of the treadle operating by the foot. Others are made with long arbors to enable the farmer to grind his scythe with facility.

### Scythe Rifles

Of the best kinds. Austin's and other celebrated makers.

### SCYTHE STONES.

Quinebaug or Cummington, unrivalled for setting a good edge, Norway Rag, Indian Pond, &c.

### Trucks. (Fig. 35.)

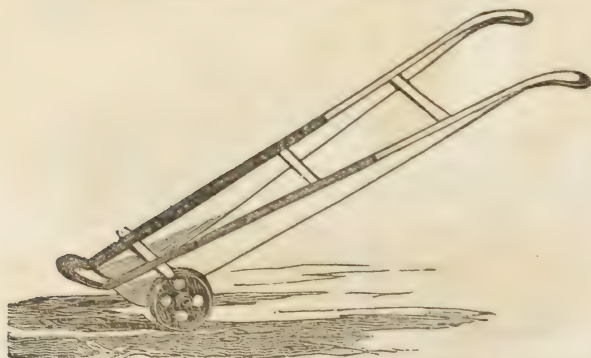
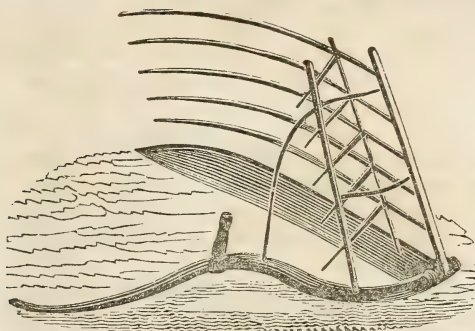


Fig. 35 represents trucks used in Stores, Warehouses, for moving boxes, casks, bales, &c. They are of various sizes.

**Wilcox's Grain Cradle.**

Figure 36.

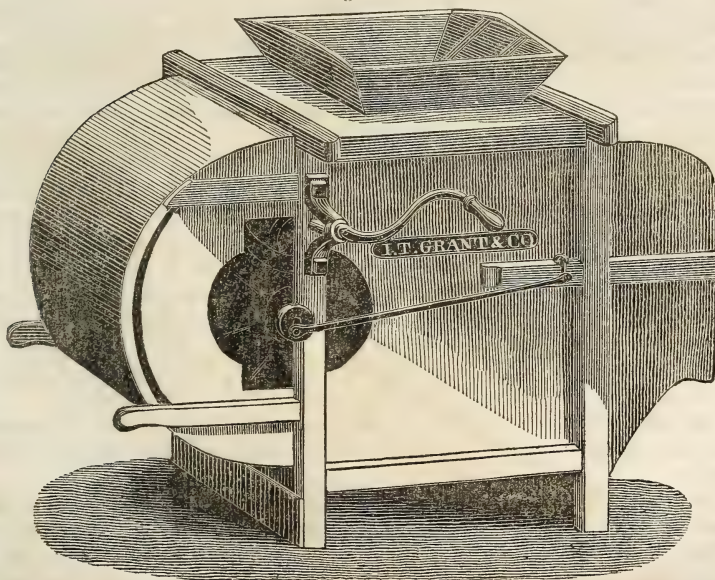


This is considered the best kind now in use, the fingers are adjusted by screws in the most simple manner.

The scythes are Messrs. Phillips, Messer, Colby & Co's. Warranted and very light.

**I. T. GRANT'S PATENT FAN MILL.**

Figure 37.



We are authorized and are manufacturing the above kind of mill, which we believe to be superior to all other mills in use for cleaning every kind of grain, grass seeds &c. which it does most perfectly at one operation.

We make various sizes to suit the different markets, of the best materials and in the most substantial manner. Seven sieves accompany each mill,

with printed directions (permanently attached) for placing the sieves, slides, &c. to clean the different kinds.

The following statement is from the inventor.

"Our Fan-Mills have taken the first premium at four of the New York State Agricultural Fairs, and at the State Fairs in Pennsylvania and Maryland, in 1845. We were awarded the first Premium at the Fair of the Mechanics' Institute, held in the city of New York, in 1846, and also at a large number of county Fairs. Our Mill received the highest consideration at the great National Fair recently held at the city of Washington. It has uniformly and in all cases taken the first Premium wherever it has been presented for competition. We have had frequent trials of them against time, and find no difficulty in chaffing and screening one bushel of Wheat per minute, (with the large sizes,) taking out all the chaff, cockle, and smut at the same time, being the only Mill that cleans Wheat at one operation, known to the inventor; (all other Mills have to run the Wheat through twice to perform the same labor.) They will also clean all other kinds of Grain and Seed at once running through the Mill, (as given by the directions.) Certificates the Inventor thinks needless, as we warrant our Mills to perform according to recommendation. If necessary, we could procure them from many gentlemen, stating that they have saved enough Timothy seed in one season, while cleaning their Wheat, to pay for the Mill."

*Directions for cleaning Grain and Seed.*—For chaffing and screening Wheat.—Put No. 2 seive in No. 1 groove, No. 4 in No. 3 groove, No. 8 in No. 4 groove and the board in No. 5 groove pushed back even with No. 9 seive. If cleaning for seed, put No. 7 in No. 6 groove, if for market, put No. 8 in No. 6 groove—give it the middle shake and turn fast enough to work the grain off the sieves, and open the air slides sufficient to blow the chaff and smut over the back end of No. 7 seive.

For Rye and Buckwheat.—Put No. 2 in No. 1 groove, No. 4 in No. 3 groove, No. 8 in No. 6 groove, and give it the long shake. If you want to screen rye, rig the Mill the same as you do wheat for market.

For Oats.—Put No. 1 seive in No. 1 groove, No. 2 in No. 3 groove, If to separate Oats and Peas, or take out thistle heads, put No. 4 in place of No. 2—give it the long shake and close the air slides part way up—put the screen board in the lower groove.

For Barley.—Put No. 2 seive in No. 1 groove, No. 4 in No. 3 groove, No. 8 in No. 6 groove, and give it the long shake.

For Rice.—Put No. 2 seive in No. 1 groove, No. 4 in No. 3 groove, and No. 8 in No. 6 groove—give it the long shake and shut off part of the wind.

For Corn, Peas and Beans.—Put No. 2 seive in No. 2 groove, the board in No. 6 groove—open the air slides and give it the short shake.

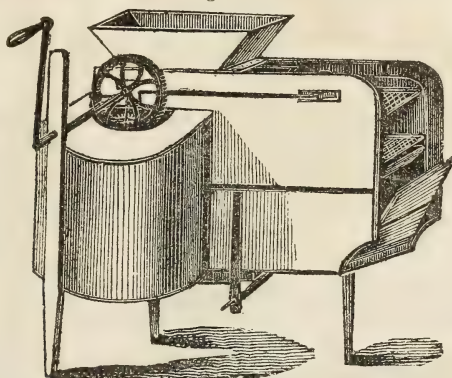
For Flax Seed.—Put No. 4 seive in No. 2 groove, No. 8 in No. 4 groove, No. 12 in No. 6 groove—Shut up the air slide and give it the long shake.

For Timothy and Clover Seed.—Put No. 4 seive in No. 1 groove, No. 12 in No. 3 groove and the board in No. 6 groove—shut the air slides and give it the long shake. If you want your Timothy seed perfectly clean, put a No. 20 seive in place of No. 12.

N. B.—Be careful the Mill stands level, that the grain works equal on the sieves. In all cases do not put in any more sieves than the directions direct. When you get the desired shake on the shoe of the Mill, then open or shut the air slides as the case may be, to get the desired draft of wind. Keep the Mill well oiled with winter strained lamp oil.

**HORIZONTAL FAN MILL.**

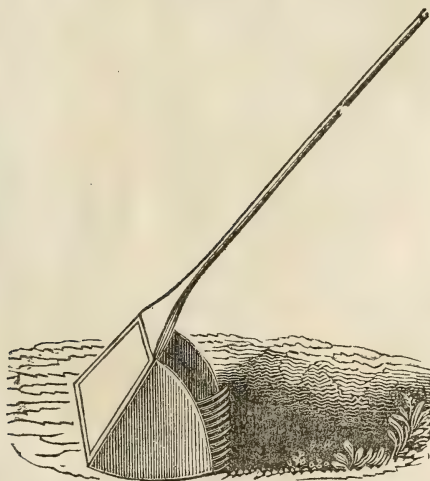
Figure 38.



This is more particularly adapted to the wants of N. E. farmers. It is low priced, light and portable, still strong, and works with great efficiency, and cleans grain and small seeds with much despatch at a single operation. There are various other kinds of Fan Mills.

**CRANBERRY RAKES.**

Figure 40.



An excellent article for gathering cranberries, and saves the labor of many persons. After raking, the berries are spread until the chaff is dry, and winnowed as grain.

# Horse Power.—(Fig. 41.)

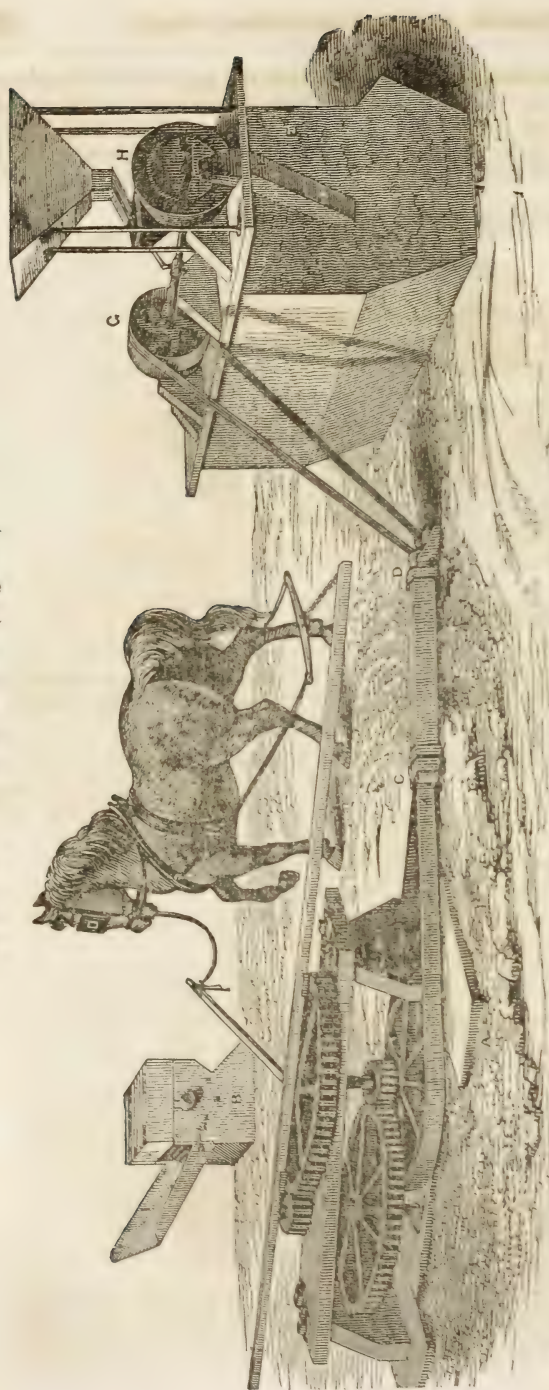


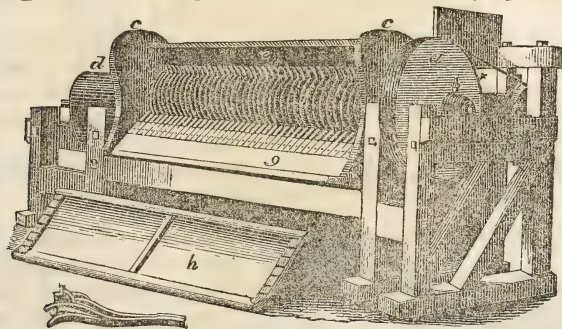
Fig. 41 shows the construction of cast iron horse powers so plainly as to render much description unnecessary. They are moved by one or more horses, attached to wooden arms inserted in sockets in the upper wheel. The belt is of leather, and bands the lower wheel, and then passes crossed through a box (C D), with rollers in it, on to the wheel G, moving the mill H. The belt sometimes runs from an upright wheel set on to the horse power by double gearing, The horse walks over the box (C D) in moving round.

Fig. 41 may be packed up and carried easily in a two horse wagon from one place to another. The latter is recommended as being the strongest and most desirable. These powers are particularly recommended for the South and West.

### Endless Chain Horse Powers,

Are made with various modifications and varying in prices. They are much used at Depots, and other places, for sawing wood and for work requiring an equal power. There are two sizes, to be worked by one or two horses.

### Improved Eagle Cotton Gin.—(Fig. 42.)



*Description.*—*a*, driving brush pulley; *b*, slide; *c, c*, end boards; *d*, cylinder pulley; *e*, top board; *f*, saws; *g*, grate fall; *h*, seed board, with a section of the patent grate below it; *i*, idler pulley.

After carefully unpacking the different parts of the Gin, put the front pieces into the posts and fasten them securely with the joint-bolts.

The Saw Cylinder should be first placed in the frame, then the piece having the false grates upon it, and then the brush. The top timbers may then be put on and fastened. See that all parts of the frame are square. The grate fall should then be hung in its place, and the top boards and slides fitted in, so that the marks on their ends will correspond with those on the timbers. Then adjust the saw cylinder and false grates with the tempering screws at the ends, so that the saws and grates will exactly correspond, taking care not to turn the screws any farther than is sufficient to keep them steady and in their places.

See that all joints of the frame are screwed up tight—place the Gin in the position in which it is to stand, and fasten it securely to the floor or platform, so that it will stand perfectly level. See that the shafts turn freely on their axes, and that the saws run freely in the centre of the spaces between the grates.

The oil cups at the axes of the shafts should be nearly filled with oil when the Gin is started, and the wick which conveys the oil to the axes should be enlarged or diminished, until the proper quantity is supplied to prevent friction. The tube containing the wick should be withdrawn when the Gin is stopped, and dropped into the cup to prevent wasting the oil, and replaced again when the Gin is again put in operation.

The saw cylinder and the piece having the false grates upon it, may be moved endwise and adjusted by the screws at their ends.

Place the mote-board 3 to 5 inches below the brush, slanting down toward the front part of the Gin, and extend another board from beneath it down to the floor; it must then be moved either forward or back, and

the slant of it varied until the motes and false seeds are separated from the seed cotton and fall under the saw cylinder.

The seed-board, may be raised or lowered by means of the small bolts on which it rests at the ends, and it may be varied so as to enlarge or diminish the space containing the seed cotton.

A 10 inch saw cylinder should run about 180 revolutions per minute.

A 12 inch       "                       "                       160       "       "

A 13 inch       "                       "                       150       "       "

Great care should be taken to fix the mote-board in a proper position to separate the motes from the clean cotton, as well as to adjust the seed-board, so that the seeds will be discharged as fast as ginned, and it is essential that the speed of the brush should be very rapid, and that all the axes should be kept oiled and prevented from heating.

Prices of Hand Gins, with 14 to 18 saws each, \$60,00. Power Gins, with 30 to 100 saws each, \$3 70 per saw.

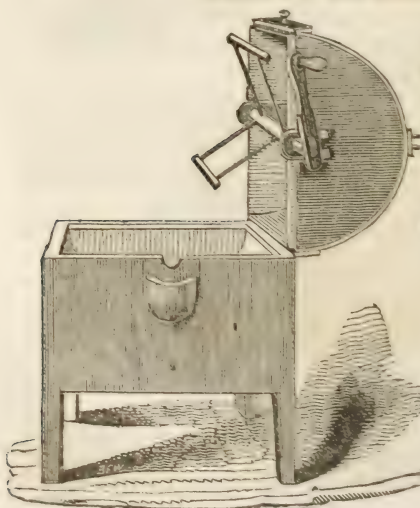
#### Kendall's Cylindrical Churn. (Fig. 43)



They are the best in use, as it is simple in its construction, and combines all the good qualities of other cylindrical churns with this additional advantage, that the revolving dasher can be taken out in a moment, any time it is required to be cleansed. This is important after every churning, in order to keep it sweet and from tainting the cream.

They are light and portable and may be placed upon a bench or a table and operated by a child. There are 5 sizes, holding from 2 to 20 gallons.

#### Gault's Churns. (Fig. 44.)

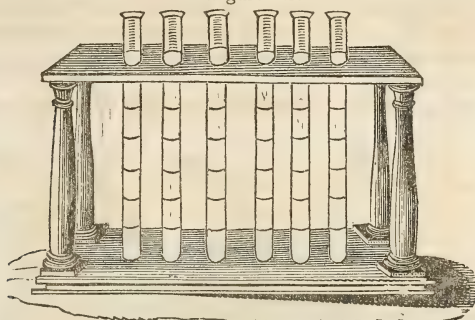


This is also a celebrated article, and by some, even preferred to any other kind. The cut represents the top or upper half lifted up to receive the cream or discharge the butter.

We have also the dash and other kinds of churns, but the two named above are the most in use.

## LACTOMETER.

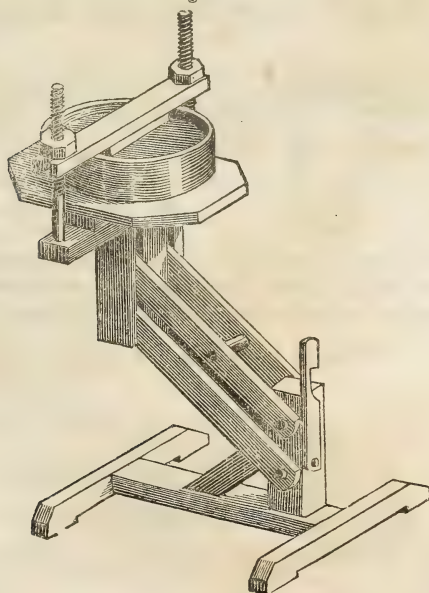
Figure 45.



The only proper instrument for testing the qualities of milk drawn from different cows. It consists of glass tubes placed perpendicularly in a wood frame: these tubes are divided and subdivided by marks into equal spaces, they are filled to equal height, each with the milk of a particular cow, when after remaining a proper time, the quantity of cream in each is readily seen through the glass, and the exact difference determined by the marks.

## Patent Self-Acting Cheese Press.

Figure E.

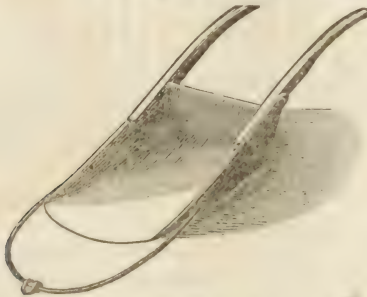


This is light, yet strong and portable, and affords many conveniences to the dairy woman. It is in reality a table on which to turn the cheese,

no forcing screws, nor lifting heavy weights, but the cheese creates a constant and regular pressure, of twelve times its own weight, whether large or small, and if a greater pressure is needed, one pound laid upon the cheese or table and it adds 12 pounds increased pressure and so on. The cheese is not removed from the press until the pressing is completed.

### **Cast-iron Dirt Scrapers, or Ox Shovels.**

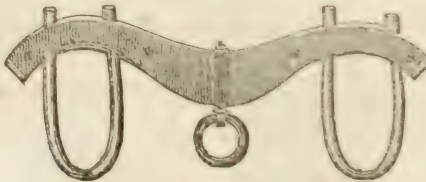
Figure F.



This is a kind which has not long been in use, but it is found to be far superior to any thing for the purposes of road making, levelling hills, filling hollows, digging wide deep ditches and cellars, and are found very convenient on every farm.

### **Gould's Ox Yokes and Bows.**

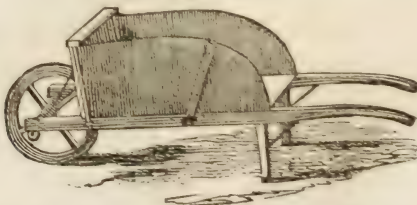
Figure 46.



These are a celebrated yoke, of which we have all his different kinds and sizes, and can furnish with or without bows, and irons complete. We have also yokes from several other approved makers.

### **Wheel and Canal Barrow.**

Figure 47.



Of these we have several kinds and sizes.

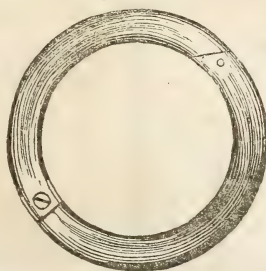
### Ox Balls.

These are of brass or composition. They are screwed on the ends of the horns, and thus prevent cattle from injuring each other by hooking. They are also very ornamental.

Figure 48.



Figure 49.



### Cattle Tie. (Fig. 48.)

This cut represents a chain for confining cattle in their stables. The large ring works up and down upon a round post or stanchion at the side of the manger; the ring being much larger than the post, admits of passing it over a short pin which is inserted in the post above the height of the animal on which it will hang until the animal steps up by the side, when the person in attendance takes the ring off the pin and passes the chain down astride the neck, and draws the T on the one end of the chain through one of the rings (according to the size of the animal's neck) on the other end.

It is the neatest and most secure fastening that we know of, and at the same time the most comfortable; as the animal slips the chain up and down the stationary post, by the large ring, as it wishes to move its head in feeding or getting up and lying down: it can also turn and lick itself thus fastened. Such a chain will last an age.

### Bull-Rings. (Fig. 49.)

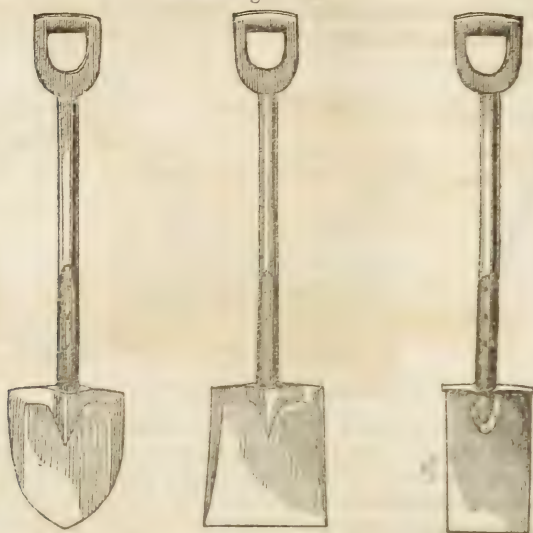
Every bull should be rung after attaining the age of one year. It is easily done by punching the cartilage between the nostrils, and then inserting the ring and screwing it together. With a ring in his nose the most fractious animal is easily managed.

### Barn and Carriage House door Rollers.

They are of various sizes, forms and prices, and are very much superior to hinges for large heavy doors, as the doors are more easily moved, and never liable to be damaged by winds. They are also much cheaper.

## SPADES AND SHOVELS.

Figure 50.



O. Ames's, Carr's and Stone's Cast-steel, and steel pointed shovels and spades of all sizes, with square and round points and long and short handles.

## Partridge's Premium Manure Forks.

Figure 51.



These are the most celebrated forks in use, and we believe the cheapest whether, used by the farmer himself, or by those employed; they

have 4, 6, 8, or 10 tines, and are drawn from a solid bar of cast-steel, without a weld or lap, and so perfectly suiant and of such temper as to possess the most perfect elasticity.

We have a variety of kinds from other makers of high reputation, and for which lower prices are asked, also a heavy strong kind for spading, digging vegetables, &c.

### Field Hoes.

We have a great variety from many different makers, of cast-steel, and steel plated eye hoes, both with and without handles.

Figure 52.



Figure 53.

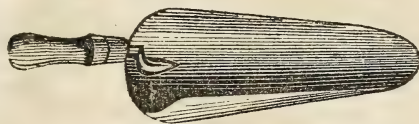


Figure 54.



### Garden Hoes.

Fig. 52. Dutch or Schuffle Hoe, 3 to 12 inches wide, has a socket to receive a long handle. They are much approved for garden use, as the operator steps backward and leaves the ground newly worked and untrodden. Others are too numerous in kinds and forms to admit of description, some light and delicately made for the Ladies to use.

### Transplanting and Weeding Trowels, (Fig. 53.)

Of different sizes and forms, made of cast steel neatly finished and polished, and are indispensable in every garden for transplanting and weeding purposes.

### Garden Rakes, (Fig. 54.)

Are of various kinds, sizes and forms, the best are Butterfield and Sibley's German steel, having from 8 to 14 teeth, drawn from a solid bar without a single weld or lap; they are light, strong, and neatly finished with handles. Others are of iron, the teeth riveted into the heads, and are sold with and without handles; some with wood heads and iron teeth, sold only with handles, and some are made with a small hoe blade confined on one side of the head opposite the teeth.

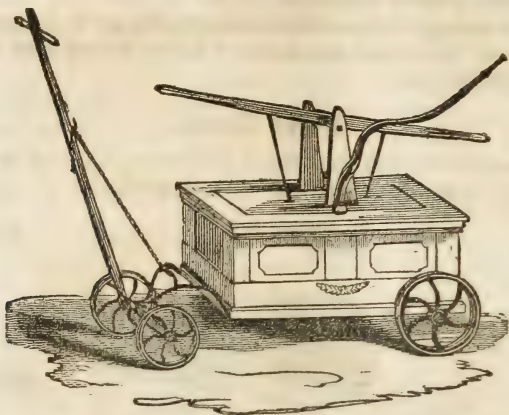
### The Grass Lawn Rake. (Fig. 55.)



Fig. 55 has teeth sharpened on both edges like lancets, and is used for raking the grass in order to tear off the flower heads or buds of daises, dandelions, and other plants in grass lawns.

**Garden Engine.**

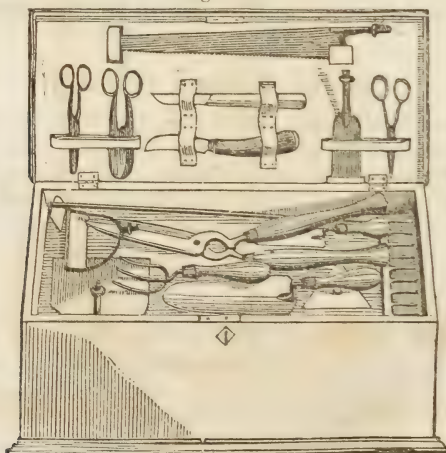
Figure 56.



The box of this engine will hold 40 gallons—with cast iron wheels, and handles so that one person can move it; 2 1-2 inch double action pump, and will throw water 70 feet horizontally and 40 feet high, with one person to work it. They are well calculated for watering gardens, washing windows, destroying worms on trees or shrubbery, protecting buildings against fire from other buildings, &c. Sulphur put in water and thrown on plants, will destroy the worms on them. This engine would prove very useful to horticulturists, and may be made serviceable, in a drouth, for watering gardens, nurseries, &c.

**HORTICULTURAL TOOL CHEST.**

Figure 57.



A very useful collection of articles for the use of gentlemen or ladies, making up a complete set of Garden Tools, consisting of Pruning Saw,

Pruning Chisel, Weeding Hoe, Garden Rake, Tree Scraper, and Scuffle Hoe. All of which are fitted to one handle which may be screwed together or unscrewed as required, packed into the chest, and locked up. It also contains Twig Cutter, Vine Scissors, Flower Gatherers, Grafting Chisel, Grafting Hammer, Strawberry Fork, Flower Weeder, Transplanting Trowel, Weeding Trowel, Garden Rule and Line, Grass Shears, Sliding Pruning Shears, Pruning Knife and Budding Knives: and all so compact and light as to be easily carried about the nursery or garden with one hand by the handle on top.

## BOG HOES. POST SPOONS.

Figure 58.

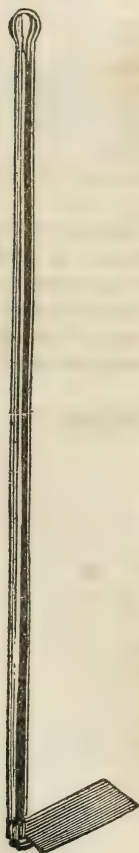


Figure 59.

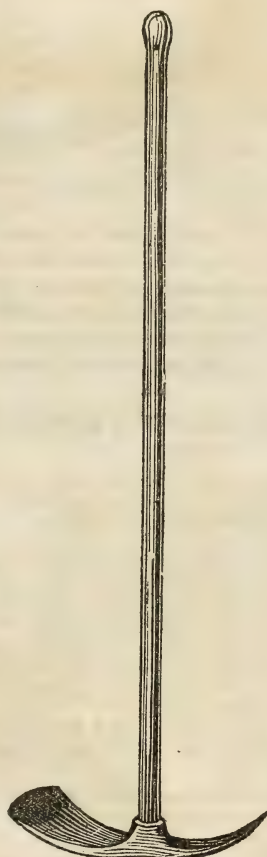


Figure 60.



Figure 61.



Fig. 58, Bog Hoes, of various kinds, wide and narrow.

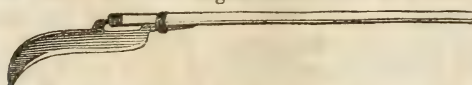
Fig. 59, Bog Hoe and Pick attached.

Fig. 60, Post Spoon for digging post holes.

Fig. 61, Round Pointed Shovel.

**Brush or Bramble Hook.**

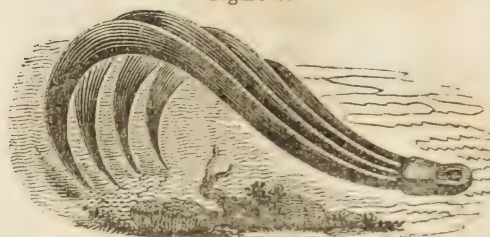
Figure 62.



A strong and useful implement for cutting brush or brambles about fences, or in clearing or underbrushing groves and forests.

**The Brush or Root Puller.**

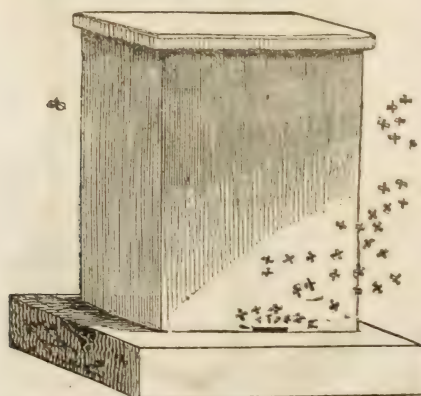
Figure 63.



This is a very useful implement to attach to bushes, clumps of roots, and bogs, for the purpose of pulling them out of the ground. It is made with two, three or four claws. These are hooked to the bush close to the ground, an ox chain is then hooked into a hole at the other end of the puller, the cattle attached, when the bush and roots are easily hauled out. They are great labor savers in clearing new lands or bushy pastures.

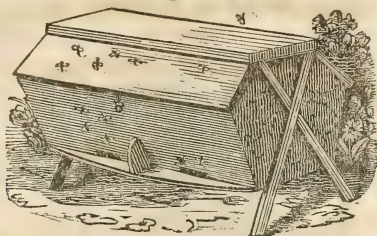
**Beard's Patent Bee Hive and House.**

Figure G.



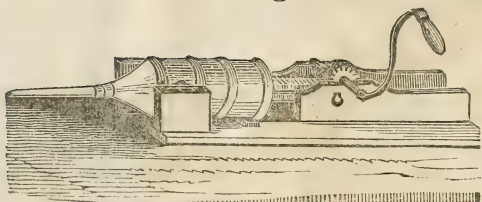
So great and numerous have been the inventions and improvements in bee hives and houses within the last five years, that we could not do justice by any description we could make. We have many kinds, embracing the most prominent improvements.

Figure 64.



**Sausage Stuffer.**

(Fig. 65.)



With this machine sausages are stuffed with extraordinary despatch and ease. Sausage making establishments cannot, and farmers should not, do without them.

## MOTT'S AGRICULTURAL FURNACES

Figure 66.



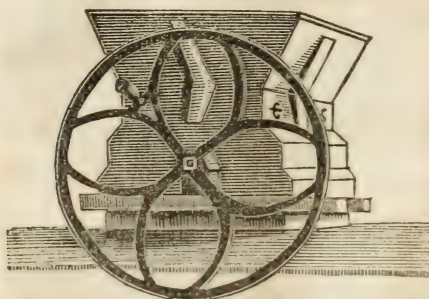
Are admirably adapted to boiling vegetables and food for stock, and are often used for household and other purposes where much water is required to be heated.

They are a double kettle or boiler connected on the top of a box stove in such a manner that the fire passes between the outer and inner kettles, which causes the water to boil as quickly and with as little fuel as in a boiler set in brick.

There are several sizes holding from 15 to 120 gallons; they possess the advantages of being used in different places, and are light and portable.

## SUGAR MILLS.

Figure 67.



Although they are not strictly agricultural implements, yet it has become a custom to keep them in connection with agricultural tools, and with our facilities we make many, of two kinds; they are used by grocers and country traders in grinding and preparing sugars for use when taken from the original packages.

One kind has a revolving grater cylinder and pulverizes by grating, the other crushes and pulverizes by the sugar being passed between the cast-iron rollers.

## FRUIT GATHERER.

Figure 68.



The cut represents two half round cups of tin or other light metal, the size of a large apple, attached to iron arms and confined to a light pole, along the side of which a strong string passes and is fastened to one arm, when drawn causes the cup to enclose the fruit, which is carried from the upper and outermost limbs with safety to the ground.

## *Fruit Gatherer.*

Figure 69.



This kind is made of tin or sheet iron and placed on a handle, the stem of the fruit is passed between the teeth and forced from the limb and drops into the cup below.

## Pruning Saw and Chisel.

Figure 70.



The blade of the saw is about 12 inches long, attached to the blade of the chisel at one end, and to the socket of the chisel handle at the other

end. The chisel is 3 inches wide by 4 inches long, made thin, and of the best cast steel. A wooden handle of convenient length is inserted in the socket handle, enabling a person to stand on the ground and trim his trees at his convenience.

Figure 71.

Figure 72.

Figure 73.



### Lopping or Branch Shears.

Fig. 71 is very strongly made, with long wood handles, and is used for cutting thick branches from trees, shrubbery, hedges, &c.

### Sliding Pruning Shears.

Figs. 72, 73, with wood handles, differ from the Lopping or Branch Shears, in having a moveable centre for the motion of one of the blades, by which means, instead of a crushing cut, they make a draw cut, leaving the section of the part attached to the tree or shrub smooth, as if cut off with a knife; they are also much lighter and better finished than the Lopping Shears.

### Pruning Scissors with Bows.

Figure 74.



Fig. 74 is adapted to pruning small twigs, cutting flowers, &c., and is a very useful and cheap article for ladies' use.

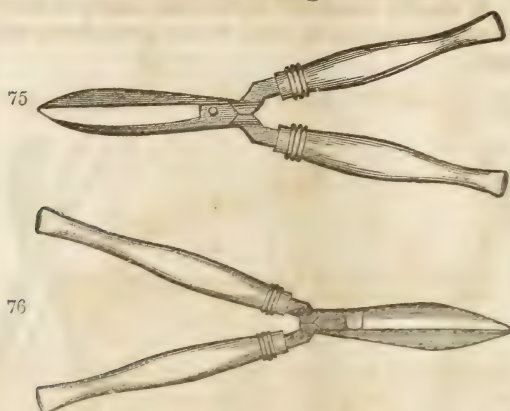
**Garden or Hedge Shears.**

Fig. 75 represent this article without the Pruning notch. Fig. 76 has the pruning notch, which is of considerable advantage, when used for trimming hedges or shrubbery, as it enables the operator to cut much stronger twigs than could otherwise be cut by the shears.

Figure 77.



Figure 78.

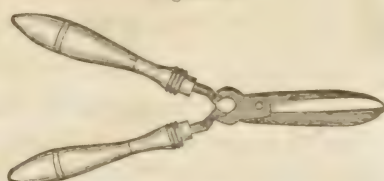
**Grass Edging or Border Shears.**

Fig. 77 is chiefly used for trimming the sides of box and grass edgings, and is constructed so that the operator may stand upright whilst using them; the one figured here has a wheel attached, which is generally considered an advantage.

**Ladies' Garden Shears.**

Fig. 78 is small, light, and neatly finished, and is very useful for trimming box trees and bushes, as well as for many other purposes.

**Ladies' Pruning Shears.**

Figure 79.



Fig. 79, with wood handles, is handsomely and lightly made ; they are very useful in trimming shrubbery, &c., which is too large to be cut by the Hand Shears.

***Avarrancator—Pole Pruning Shears.***

Figure 80.

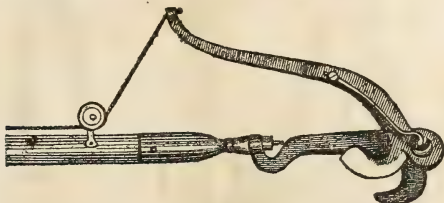


Fig. 80 is attached to a pole and operates by means of a lever moved by a cord and pulley : its use is to enable a person, standing on the ground, to prune trees, some of the branches of which could not, perhaps, be readily pruned by any other process ; branches of one inch and a half in diameter may be easily cut off with this instrument. Avarrancators of small size are also very useful in cutting off from shade and fruit trees small branches to which insects have attached themselves ; they are also used for gathering fine fruits, which, when cut, will fall into a basket attached to the instrument when used for this purpose.

**POLE PRUNING NIPPERS.**

Figure 81.



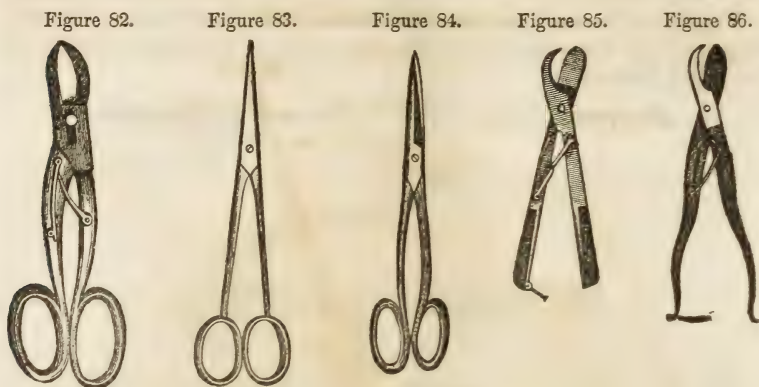
Fig. 81 is a very effective instrument, and possesses the advantage of having a sliding cut, which lessens the labor of the person pruning, and leaves the branch which has been cut as smooth as if a knife had been used ; this instrument is much superior to the Avarrancator, but will not cut a branch of greater diameter than one inch.

**PRUNING SCISSORS.**

Fig. 82 is very handsomely made, with sliding centre and spring, and is fitted with sheaths ; these scissors cut as smoothly as a pruning knife, and for pruning rose bushes, &c., are superior, especially for ladies.

**VINE SCISSORS.**

Fig. 83 is used for thinning out grapes, when they have grown too closely on the bunch ; also for removing superfluous leaves, twigs, &c.



FLOWER GATHERER.

Fig. 84 is a pair of scissors combining tweezers or pincers ; they are of great advantage in gathering roses and other flowers which have thorny stems, as the flower cut by the scissors, is held fast by that part which acts as pincers.

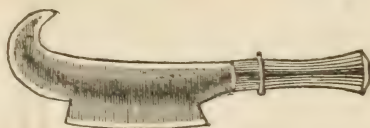
## HAND-SLIDING PRUNING SHEARS.

Fig. 85 represents a pair of the iron handled shears. Fig. 86 a pair with cocoa handles ; they are similar in all respects except the style of finish, and for gentlemen's use, are the very best instruments for pruning roses, &c. ; they have the sliding centre and spring, and make a perfectly smooth cut.

Figure 87.



Figure 88.



THE GRASS EDGING KNIFE.

Fig. 87 is fitted to a straight handle, and used for paring the edges of grass bordering walks, &c. ; also for cutting the outlines of sods, which may then be readily raised by the spade.

## BRIER OR BILL HOOKS.

Fig. 88 is of various forms, though the one represented here is the kind most approved ; they are used with either long or short handles, as circumstances may require, and are very useful for trimming the sides of hedges, cutting brush, brambles, &c.

**GARDEN ROLLER.**

Figure G.

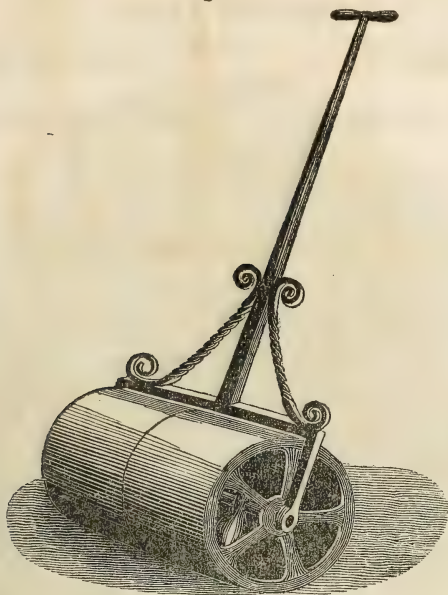


Fig. G represents a garden roller, made entirely of iron. The cylinder is cast in two parts, 20 inches in diameter and 12 inches long ; the handle is of wrought, confined to the arbor ; to the arbor is attached, inside of the cast cylinder, a counter balance, which adds weight to the instrument, and causes the handle to stand perpendicular when not in use.

We have also those, the roller in one piece made of granite, and of course has no counter balance, and the handle falls to the ground when not in use.

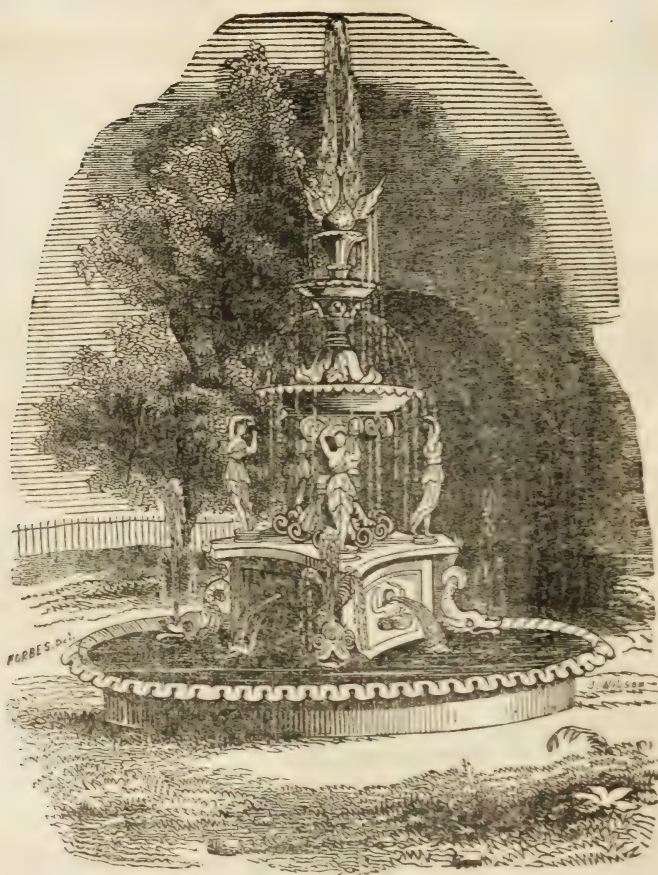
Figure 89.



**ORNAMENTAL GARDEN VASE.**

## FOUNTAINS.

Figure 90.



These are made highly ornamental for the garden and lawns. The one we introduce to our readers is of the composite order, embracing a great variety of figures, each of which might be taken for a single fountain. They are made to order after any desirable pattern, and cost from, \$10 up to \$1500.

# RECAPITULATION

## of Implements described in the foregoing Catalogue,

With a List of Articles not Described Annexed.

### IMPLEMENTS DESCRIBED.

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| Eagle Plows.                      | Cotton Gin.                         |
| do Self-sharpening do.            | Horse Powers.                       |
| Side-hill or Swivel do.           | Ornamental Fountains.               |
| Left-Hand do.                     | Corn Shellers.                      |
| Small Plows, various kinds.       | Cylinder and Common Churns.         |
| Sub-soil do.                      | Fanning Mills.                      |
| Paring do.                        | Hand Corn do.                       |
| Double-mould do.                  | Coffee do.                          |
| Corn do.                          | Corn and Cob crackers and crushers. |
| Cotton do.                        | Vegetable Cutter.                   |
| Rice Trenching do.                | Grass Scythes, wide and narrow.     |
| Expanding Cultivators.            | Bramble and Bush Scythes.           |
| Universal do.                     | Lawn do.                            |
| Langdon's Patent do.              | Cradle or Grain do.                 |
| Garden Hand do.                   | Patent and Common Scythe Snaths.    |
| Geddes' Harrow.                   | Austin & Fisk's Scythe Rifles.      |
| Chandler's do.                    | Common do do.                       |
| Double Square do.                 | Quinebaug and Indian pond Scythe    |
| Common do.                        | Stones.                             |
| Cultivator do.                    | Horse Revolving Hay Rakes.          |
| Iron Field Rollers.               | Hand do do.                         |
| Garden Rollers of Iron and Stone. | Iron and Steel Garden do.           |
| Seed Sower and Seed Planter.      | Grain Cradles.                      |
| Batchelder's Corn do.             | Grindstones, mounted.               |
| Cylinder Hay, Straw and Stalk     | Garden Engines.                     |
| Cutter.                           | Store, Depot and Wharf Trucks.      |
| Tower's and Stevens' do.          | Shovels and Spades.                 |
| Lever do.                         | Hedge Shears.                       |
| Tower's Cast Steel, Handled Hoes. | Grass and Border do.                |
| Steel plated Eye do.              | Sliding Pruning do.                 |
| Schuffle or Garden do.            | Twig Cutters.                       |
| Grubbing do.                      | Vine Scissors.                      |
| Post Spoons.                      | Flower Gatherers.                   |
| Partridge's Elastic Manure Forks, | Fruit do.                           |
| Four, Six, Eight and Ten Tines.   | Edging Knives.                      |
| Common Manure Forks.              | Lopping Shears.                     |
| Spading Forks.                    | Pruning Scissors.                   |

|                           |                              |
|---------------------------|------------------------------|
| Cast-Steel Hay Forks.     | Ladies Garden Shears.        |
| Bill Hooks.               | do Pruning do.               |
| Pruning Saw and Chisel.   | Pole do do.                  |
| Bull Ring.                | do do Nippers.               |
| Cattle Ties.              | Hand Sliding Pruning Shears. |
| Ox Yokes and Bows.        | Transplanting Trowels.       |
| Ox Shovels.               | Weeding do.                  |
| Ox Balls.                 | Root Pullers.                |
| Cranberry Rakes.          | Bee Hives.                   |
| Sausage Stuffers.         | Wood and Iron Grain Scoop.   |
| Lactometer.               | Wheel Barrows.               |
| Self-Acting Cheese Press. | Ornamental Garden Vase.      |

### Articles not Described.

|                                     |                                  |
|-------------------------------------|----------------------------------|
| Steel Manure Rakes.                 | Patent Axe Handles.              |
| German Steel 4 prong Potato Hoes.   | Picks.                           |
| Picks and Mattocks,                 | Mattocks.                        |
| Cast Steel Potato Diggers, 6 tines. | Common Axe Handles.              |
| German Steel Hay Forks.             | Hoe, Shovel and Fork Handles.    |
| Garden or weeding do.               | Iron Bars.                       |
| Strawberry do.                      | Garden Bars.                     |
| Tree and Ship Scrapers.             | Garden Reels and Lines.          |
| Ditching Knives and Spades.         | Floor Scrapers.                  |
| Pruning Saws.                       | Flails.                          |
| Grafting do                         | Peat Knives and Spades.          |
| Grafting Chisels.                   | Patent Coach Wrenches.           |
| Budding and Pruning Knives.         | Toy Hoes, Rakes and Spades.      |
| Garden Syringes.                    | Lanterns.                        |
| Sickles.                            | Nail Hammers.                    |
| Grass Hooks.                        | Apple Parers.                    |
| Corn Knives.                        | Baskets.                         |
| Draft and Log Chains.               | Ox Muzzles.                      |
| Trace do.                           | Tobacco Cutters.                 |
| Halter do.                          | Whiffletrees, double and single. |
| Dog do.                             | Farm and Truck Hames.            |
| Fence do.                           | Riddle and Meal Seives.          |
| Cattle Cards.                       | Letter Brands.                   |
| Curry Combs.                        | Patent Cast-iron Pumps.          |
| Horse Brushes.                      | Metalic Tree Labels.             |
| Caterpillar do.                     | Butter Workers.                  |
| Cast Steel Axes and Hatchets.       | do Ladles and Stamps.            |
| Barn-door Rollers.                  | Grindstone Rollers.              |
| Common Wrenches.                    | do Arbor and Cranks.             |

In addition to the above we have a great variety of articles not here enumerated or described, and are constantly making additions of new and improved implements. We also make to order such implements in the line as are desired.

## **Agricultural and Horticultural PUBLICATIONS.**

---

- Downing's Landscape Gardening and Rural Architecture,  
do Cottage Residences,  
do Fruit and Fruit Trees of America,  
do Ladies Companion to the Flower Garden.  
American Agriculturist,  
Bridgman's Young Gardener's Assistant,  
do Kitchen Gardener's Instructor,  
do Florist's Guide,  
do Fruit Cultivator's Manual,  
American Herd Book,  
do Shepherd,  
Gardener's Farmer's Dictionary,  
Rural Economy,  
Johnston's Agricultural Chemistry.  
American Poulterer's Companion,  
do Agriculture,  
New American Orchardist,  
Leibig's Animal Chemistry,  
Bigelow's Plants of Boston,  
Guide to the Orchard,  
Practical Farmer,  
Complete Farmer,  
Farmer's Treasure,  
Farmer's Mine,  
Hoare on the cultivation of the Grape Vine,  
Treatise on Milch Cows, with introductory remarks and observations  
on the Cow and Dairy,  
Blacklock's Treatise on Sheep,  
Bevan on Bees,  
Boswell on Bees, Pigeons, Rabbits and Canary Birds.  
Townley on Bees,  
Smith on Bees,  
Smith's Productive Farming,  
Complete Gardener and Florist,  
Chaptal's Agricultural Chemistry,  
Complete Florist,  
Every Lady her own Flower Gardener,  
American Flower Garden Directory,  
Cobbett's American Gardener,  
Kitchen Fruit Gardener,  
Catechism of Agricultural Chemistry and Geology,  
Essay on Guano, by Teschemacher,  
Silk Question Settled,  
Transactions of the Worcester Co. Horticultural Society.  
Cole's American Veterinarian.

## REMARKS ON SOILS.

Stiff clays should always be kept in grass, for, owing to their adhesiveness, it is so difficult to cultivate them, they will not pay for doing so at the present prices of produce and labor; besides, if properly taken care of and occasionally manured, their average yield of grass is a good one, and it does not run out as in most other soils. Loamy and sandy soils should be kept in a rotation of crops: and the lighter the soil the harder it may be worked in this way, provided it be well manured after each crop is taken from it, as it exhausts itself more rapidly than a loam, and above all, a clayey soil. The latter is cold, inert, and sluggish, and like an unwieldy animal, cannot be roused beyond a certain production.

We are great advocates for stirring the ground deep. This is best done with the subsoil plow, which loosens the substratum without turning it up to the surface. Subsoils are rarely as rich as surface soils; they should therefore be brought up and mixed with the surface soil no faster than they can be enriched and made equal to them. A rich surface soil may be turned up to any depth. For example, in alluvial bottoms, when a depth of six inches of soil has been cultivated till it has become somewhat exhausted, by turning up an additional inch or more it gives fresh rich earth to the cultivated surface, and is equivalent to a good manuring.—Trench or deep plowing, under such circumstances, is very beneficial.

## THE GARDEN.

In garden culture greater pains should be taken than in field culture, because the products there are required to be of superior quality, and it is desired to make the most of the land, to say nothing about the eye being gratified with its tidy appearance. It should be sheltered from cold winds; have a southern or eastern aspect if possible, and a warm dry soil for all early vegetables. Later products may be put on a colder soil. The deeper the ground is stirred and enriched the better. One foot is the least depth that a good gardener will be satisfied with, and if he can turn up and enrich the soil to eighteen inches or two feet, so much the better.—Indeed, with asparagus and some other products, the latter depth is absolutely necessary to produce a good crop,

## SEED CATALOGUE.

In offering this catalogue of seeds to the public, the Proprietors would say, that they have not so much desired that it should be filled with the largest number of names, or embrace in its collections all the varieties of Garden and Field Seeds that have originated in or been introduced into this country, as that it should contain the best selection of those kinds that have become so well known as to be in general use, or those of more recent introduction, which have been thoroughly tested and found to pre-

sent claims to the attention of persons interested in procuring improved varieties of Grains, Grasses and Vegetables.

The seeds which are furnished, are raised *expressly* for this establishment by the most careful growers, men whose seeds they have tested for the last five years, and invariably found them true to their names, and worthy of all confidence.

They do not claim infallibility, mistakes will inevitably occur in the best regulated establishments, but if a sincere wish to do justly, and the utmost personal care and circumspection of the proprietors, with experienced and careful assistants, can ensure correctness, purchasers may feel confident that every variety sold will prove satisfactory.

Remarks and brief directions for the culture and preservation of many of the kinds named, have been appended, which, it is hoped will be sometimes of service particularly to the inexperienced cultivator.

### GENERAL OBSERVATION.

Seeds often do not generate in consequence of the extreme dryness or dampness of the ground; from excessive heat or cold; from being covered too deep or too shallow; sometimes they are burned up by coming in too close contact with hot manures; or the soil may be too poor; or they may be eaten up by underground insects; or if they escape these, as soon as the embryo bursts from the shell, and before it can appear above ground, it may be destroyed by worms or flies, frequently so minute that the naked eye cannot perceive them; or after coming up they are choked and destroyed by weeds. All these causes should be inquired into thoroughly before complaint is made; for it is more often the fault of anything else than the seed, which prevents its germination and growth.—Where there is any doubt upon the subject, a small quantity of seed should be sown in a flower pot, and carefully guarded in a conservatory or some proper place, till a sufficient time has elapsed to prove whether it be good or bad.

### GRASSES.

*Remarks.*—There are many kinds of grasses that belong to the clover family, such as the scarlet, yellow, cow-grass, Bokhara, sainfoin, trefoil, &c.; but for various reasons, which we not have space to enumerate here, they have not flourished well in the United States, and we forbear encumbering our pages with them. The same remarks will hold good in respect to rye grass, rib grass, &c., &c. We have seen tried by our friends, nearly all European grasses and clovers, and the result is, that they are not equal to those we mention below, and our farmers, therefore, have nearly abandoned their culture. We believe that some of the indigenous grasses of America may be profitably cultivated, and we recommend experimenting with them in preference to European grasses already so often tried and found wanting.

BLUE GRASS of the West, or JUNE GRASS of the Northern States.—This is deemed invaluable at the Southwest, providing by its luxuriant

growth, a winter forage which is cropped by the stock on the ground. It is a valuable pasture grass at the North, being hardy and self-propagating and with the white clover spontaneously filling up every vacant space of waste ground in our good clay lands. But as a meadow grass it is highly esteemed, coming to maturity some weeks before the timothy or clover, and by the time they are fit to cut yielding only a small quantity of withered grass. Like the white clover it ripens and sheds its seed so as to give a prolific growth of fresh plants for the fall and spring feed. No grass equals this and white clover for fattening qualities, or to make cows produce a superior quality and a large quantity of butter. When cut with white clover, for hay, it should be housed as green as possible, and be well salted. Although it yields a comparatively small quantity per acre, it is exceedingly nutritious for sheep.

Blue or June grass makes the best lawns; growing fine and thick, the turf is firm and elastic under the feet, coupled with a velvety smoothness and softness which no other grass in the United States can produce. It should be sown at the rate of 5 to 10 lbs. per acre in the autumn or winter at the South, and early in the spring at the North. Top dress with plenty of lime, plaster, and ashes.

**RED CLOVER.**—This is one of the most important crops in the United States. It grows readily on almost any soil, from Maine to Texas, and under proper treatment almost any where yields profitable returns. By large numbers of farmers, especially in New York, New Jersey, and Pennsylvania, it is used extensively as a fertilizer in their rotation for wheat, and for this purpose nothing is better adapted. It also affords one of the most profitable crops of hay. It does well sown with orchard grass, as the two ripen about the same time. All soils are suited to it, if dry and fertile. It may be sown in the autumn or winter at the South; or on open ground, or new subdued meadows at the North, in winter wheat, or rye, while the snow is just disappearing in the spring, and while the earth is still thrown up by the effects of the winter's frost, or as early thereafter as possible. No subsequent harrowing is necessary. It may also be sown with oats or barley after the latter have been harrowed in. It should be cut when the bulk of the blossoms are turning brown, and after lying in the swarth until wilted, turned over without spreading, raked and cocked the same day, and when sufficiently cured in the cock, put in store, with the addition of a few quarts of salt to every load. There are several kinds of red clover; the large or northern, the meadow, and the dwarf. The two former are usually cultivated. Clover and all other crops sown upon light or sandy lands are greatly improved by the use of the roller. From 8 to 16 lbs. of good seed is required for an acre, more being necessary on stiff or old soils than on new and lighter ones.

**WHITE CLOVER.**—This is a valuable herbage for pastures, but does not grow to a sufficient size for profitable hay, except for sheep stock.—Clays and calcareous soils are best adapted to it, and on these, if in good condition, it grows spontaneously in great abundance. Plaster, with a reasonable degree of fertility, will always insure a luxuriant growth of

the clovers, often bringing them into existence where their presence had scarcely before been noticed. Sow from 4 to 8 lbs. per acre.

**LUCERNE.**—This is cultivated to considerable extent in the neighborhood of our cities. It requires a very deep, rich loam, as it sends down its long tap roots to a depth of 2 to 5 feet. It must be kept clear of weeds the first year, after which it completely covers the ground. It may be cut several times in the course of the season, and yields a large quantity of fodder, somewhat inferior in its nutritive qualities to the red clover. Plaster, or bones in considerable quantities, ground and scattered broadcast, and other manures, are essential to its continued productiveness on the same land. It requires ten to fifteen lbs. of seed to the acre, broadcast, or in drills at the rate of fifteen lbs.

**TALL OAT GRASS.**—This is one of the best grasses for early soiling. It grows rapidly and produces a constant succession of luxuriant fodder, whether cut or fed on the ground. A stiff clay, as well as other soils, is suited to it. It should be sown in the spring, either by itself or on winter or spring grain. It should be fed green, as it is too coarse and dry when cured to make good hay. Sow from 12 to 16 quarts per acre.

**ORCHARD GRASS** of the United States, **ROUGH COCKS-FOOT** of England.—It comes forward earlier than any other grass in the spring, and produces most abundant crops in quick succession, yielding several large cuttings of excellent hay in one season, and furnishing a great quantity of nutritive pasturage. It requires a dry and good soil, and should be cut before it ripens, or closely fed, to secure its full value. Sow at the rate of one and a half to two bushels per acre, for if the seed is not sown thick it will come up in tufts. It is more important that this grass covers the land well than any other that we know of.

**RED TOP.**—This is also called **Herd's Grass** in the Middle and Southern States. It is a valuable grass for very moist soils, yielding a large return of good hay. It is cultivated similarly to the Timothy or Herd's Grass. It makes a thicker and superior pasture to Timothy, and forms a pretty good turf for a lawn. Sow from 16 to 24 quarts of seed per acre.

**RYE & WHEAT GRASS.**—These are extensively cultivated for late and early grass pastures. They are preferable, on the whole, to the Italian or any other rye-grass we know. They should be sown distinct, the same as for a grain crop. The earlier this is done in August the better, when designed for pasture.

**TIMOTHY, HERD'S GRASS, FOXTAIL, MEADOW CAT'S TAIL.**—By all these names this grass is known. It is the king of grasses for hay in the northern parts of the United States and the Canadas. Good clays or loamy lands are best suited for it. Unless sowed late in the season it will not require harrowing, the rains planting it with sufficient depth where the surface is light or well mellowed with the harrow. It should be suffered to remain till the seed is rather past the milk, and getting into the

dough, when it may be cut, and in this state much of the seed will germinate. Enough of the seed is thus scattered upon the ground to renew and keep the permanent meadows in high condition as to productiveness. It is suited either to a moist or dry soil. If sown with clover, at the proper season, 8 quarts of seed, with 6 to 10 lbs. of clover, on a well pulverised surface, will give a good coating of grass; but on a stiffer soil, or when an immediate thick growth is desired to keep all weeds down, this quantity of seed may be increased to nearly double without being considered as wasted on the land. Timothy yields little or no after-math, and makes rather a poor thin pasture. It may be sown in August or September, or early in the spring, at the rate of 12 to 16 quarts per acre.

## GRAIN.

**BARLEY.**—Grows well on a light, rich soil, but is probably more tenacious of a fertile clay. Both wheat and barley affect a clayey loam, and contrary to the prevalent opinion in this country, we must believe with antiquity, “*Dame Ceres joys in heavy ground, and Bacchus in the light.*” But the ground for barley should be well pulverised, and be naturally rich, or made so from former years’ cultivation. No manure should be added to the crop itself, unless it be a light top dressing of liquid or solid manure after it is fairly up and on its way. The sowing should be done as soon as the ground can be worked advantageously in the spring, at the rate of 2 to 3 bushels per acre. Poor ground, heavy clays, and late sowing require the heaviest seeding. A previous soaking in a strong solution of saltpetre materially helps forward the growth. The four or six rowed is the best kind.

**BUCKWHEAT.**—This crop is generally cultivated on light land. It may be sown after the middle of May. Some sow it as late as August with wheat, and find that it will frequently mature and yield a good crop without injury to the wheat. It is a valuable crop for family use, farm stock, and poultry. It has heretofore been used to some extent as a fertilizer, being plowed in green, but the superior quality of clover for this purpose has superseded it entirely of late years. It is sown either broad cast or in drills, at the rate of 1 bushel per acre in the former, and 2 or 3 pecks if in the latter case.

**MILLET.**—This requires a dry, light soil; but a heavy crop can only be realized on a rich one. It is sown from 1st May to 20th June to ripen the seed; but a good crop of hay may be secured by sowing as late as the last of July. It may be sown in drills or broadcast. Owing to its ripening unequally, and the consequent loss of harvesting, injury by birds, &c., it is not often raised for grain, but is usually cut while the seed first begins to ripen. It will produce from 1 1-2 to 4 tons fodder per acre, equal in value to grass, and from 20 to 60 bushels of grain, equal to corn for many kinds of feeding. Sow from 16 to 24 quarts per acre. When the ground is in proper condition, and the season favorable, the former quantity in drills and 16 quarts broadcast will insure a full crop.

**OATS.**—These do best on a very strong soil, and clayey loams are well adapted to them. If plowed in the fall they may be sown on the field without further stirring the land, as early as the ground will admit of harrowing. They should, like all other grain, be cut as soon as the lower part of the stalk turns yellow. This secures the attachment of the grain to the head without wasting, till harvested, and gives a better quality of fodder for the stock. The common white oat is better than the black, though this last is extensively cultivated. If cut in a green state, the berry in the milk, the straw and grain make a fodder for horses equal to the best Timothy and clover hay. The imperial and the Bedford oats are considered the best. Sow from 3 to 4 bushels per acre.

**RYE.**—This grain is never advantageously raised unless upon dry, light soils. These may be rich or poor, a crawling sand or once floating bog, if the former is somewhat compacted by ashes or saline or putrescent manures, or by the accumulation of vegetable matter, and the latter has been thoroughly drained and received a coating of sand or loam. It should be sown from the middle of August to the middle of September. Rye is useful for soiling, or feeding off on the ground; and when the soil is good it may be thus fed in the fall and again in the spring, and afterwards allowed to ripen, when it will often produce a good crop of grain. It is sometimes sown between the corn hills in August, and by harrowing between the rows each way, it may be got into quite a state of forwardness by the time the corn is taken off the ground; or the corn may be cut up by the root and shocked on the field, and allow the rye to occupy the whole space. Sow from 5 to 6 pecks per acre.

**MULTICOLE RYE.**—Considerable has been said of this lately introduced grain, but we have few facts to relate concerning it. We doubt whether it will supersede our common rye for pasture or soiling, and it is not near equal to it as a grain.

**WHEAT.**—This is sown from the 15th of August to the 10th of November; but the most suitable time in a northern latitude is from the 5th to the 20th of September. If sown earlier it is liable to attack from the fly; if later it does not tiller so well, and is more liable to winter-kill. Wheat and indeed all small grains, yield best when cultivated in drills from 6 to 18 inches apart. Large crops have been raised sown in drills 3 feet apart. It is not near so liable to rust or mildew when sown in drills, as the air circulates more freely among it, giving a waving motion to the stalk, which is pretty certain to prevent mildew and rust. These diseases usually attack the wheat in calm weather, when the sun comes out hot after a rain. The grain should be cut when the stock first changes color near the ground. The berry is then in its dough state; but if cut then it will be found to be heavier, plumper, and yield more flour of a better quality than if permitted to stand longer, while the straw is more valuable for feeding. Wheat intended for seed should be allowed to stand till it *fully ripens*. A clover ley previously limed or plastered, is the best preparation to turn under for wheat. Calcareous soils, that is, such as have lime in them, are the most suitable for this grain; and where these do not exist naturally, lime, ashes, charcoal, and plaster, in suitable quan-

ties, must be added. Before sowing, the wheat should be thoroughly cleansed, and every particle of foreign seed removed. Then wash it three successive times in the strongest brine, mix with a coating of slaked lime, and spread out to dry. If spread out in the sun it will dry in two or three hours, if in the shade it will require longer. This preparation secures the crop against smut, and promotes the growth. The quantity of seed found most judicious as a general rule for sowing, is 5 to 6 pecks per acre; on the heaviest clay soil two bushels per acre is none too much, the same causes requiring variation as in barley and other grain. Some kinds of seed tiller better than others, which of course should vary the quantity sown. Some pertinaciously adhere to sowing the largest, plumpest berry, when it has been found that a medium size, or even shrunken berry, of a choice kind, will give quite as good a crop. The best kind of wheat is the Improved White Flint.

**SPRING WHEAT.**—This does best on land which has been plowed in the autumn, and should be sown immediately after the frost has left the ground in the spring, while it is still rough and uneven from its effects. The seed will fall into the little depressions thus formed, and as soon as the harrow can be put on it may be dragged in. It should be brined and limed before sowing, the same as winter wheat. The best varieties are the Italian and the Siberian; but in consequence of these having been more subject latterly to the ravages of the fly, they have given place to the Black Sea wheat. Sow 5 to 6 pecks per acre; on a stiff clay soil 2 bushels per acre.

**INDIAN CORN.**—This should be planted for ripening as soon as the spring frosts are out. The soil must be light, dry, and rich, to produce a good crop. It is always best to soak the seed before planting, in a strong solution of saltpetre. This gives an early, vigorous growth, and if crows and other foragers incline to depredate on the fields, this will give them so rank a condiment that they will hardly go beyond the first crop full. An absurd principle is adopted by some farmers to set up scare-crows, or kill off the birds visiting the fields. Even if they take some of the seed they will probably more than make up for it by the quantity of worms and bugs they will also destroy. But by soaking in saltpetre, or pouring into a barrel, containing a bushel or so of seed, a quart or more of very hot tar, stirring the whole mass rapidly, every kernel will have become coated, and the plunderers after picking up a few and finding them all of one pattern, will gladly give up the pillage and betake themselves to an extermination of their rival enemies to the corn, the worms, bugs, and beetles. Corn should be planted on well plowed ground, in hills, with three to six stalks in a hill, according to the kind of seed used; three to four feet apart each way, so as to admit of weeding and stirring the earth both ways with the plow or cultivator. For light land, even cultivation (not hilling) is best. The tops of the corn should never be cut off till the corn is nearly ripened; but instead of the top the whole stalk close to the ground should be cut as soon as the grain is thoroughly glazed and well into the dough-state. It will, if shocked up in the field in this state, fully mature the grain and yield good fodder from the stalk.

Sugar or sweet corn is the best for cultivating in the garden for table use. Sowing corn for soiling or fodder has been adopted of late years. This is best done by sowing in drills, say eighteen inches to two feet apart, and quite thick in the rows, or broadcast at the rate of three to four and a half bushels per acre. The best kind for soiling is the sweet corn, as its stalks are the sweetest, most juicy, and tender. Where it has taken well, and the season has proved favorable, an enormous quantity of fodder is thus raised. Every farmer ought to sow at least one acre to every five head of cattle he may design to winter. This will ensure him against a drought and the loss of his hay crop.

**BROOM CORN.**—Should be planted on land similar to the preceding, and somewhat later, as a spring frost, which could be resisted by the greater vitality of Indian corn, might effectually destroy this more unresisting plant. The rows should be about three feet apart, and the hills about two feet distant from each other; 15 to 20 good seeds should be planted in a hill, so as to ensure 8 or 10 good plants, to which number they should be thinned on a second weeding. Early and frequent stirring of the ground is essential.

## GARDEN AND FIELD SEEDS.

**ARTICHOKE** (*for the garden*).—The Large Globe is the best variety. It is propagated either from seeds or offsets. It requires a rich soil and a good deal of room. Plant the seeds early in the spring, three or four inches apart, in rows from 1 to 1 1-2 feet apart. The next year transplant the roots or offsets to beds highly manured, placing 3 or 4 roots in a circle of 6 inches, and these circles three or four feet apart. Protect during the winter by raising over them a mound of litter or light dry earth.

**ARTICHOKE JERUSALEM** (*for the field*).—This root is cultivated precisely like the potato, in hills or drills. At the South and West it is fed off by turning swine on the fields, who root them up and consume them at pleasure. A winter's supply of food is thus easily provided for their hogs, and the crop fed off the land greatly enriches it. The artichoke is considered one of the best of fertilizers, as it derives a large amount of its carbon and nitrogen from the atmosphere. It should be cultivated extensively in well grown orchards. After the fruit is gathered turn the swine on to feed them off. Their rooting them up is nearly as beneficial as plowing; they destroy, at the same time, nearly all the insects harboring round the trees, and the manure they leave is equivalent to a good top dressing. Frost does not injure them, and they will propagate themselves. They grow well on the poorest land.

**ASPARAGUS.**—There are, it is said, several varieties of asparagus, but the difference mainly arises from the nature of the soil. On strong loamy land the growth is more robust, and the shoots more tender than on sandy soil. Early in the spring soak the seed in warm water for 24 hours, then drill it thinly, in rows sufficiently wide apart to admit the hoe—when two years old they may be transplanted into permanent beds, which should be so situated as to cast off an excess of moisture. A con-

venient width for the beds is four feet: the plants placed twelve inches apart in each direction; they should be planted at least four inches beneath the surface, well manured at the time, and annually thereafter.—Salt spread broadcast over the beds at the rate of 1 to 3 lbs. per square yard, after forking them over early in the spring, adds to the growth of the plant, and makes it much sweeter and more delicate to the taste. A compost of guano and charcoal is also an excellent top dressing.

### BEANS.

#### DWARF OR BUSH,

Early Yellow, (six weeks,)  
Early Black Eyed,  
Early Pheasant Eyed,  
French White,  
Russian Speckled,  
Early Dun colored, or Quaker,  
Early China,  
Early Marrow,  
Broad Windsor,  
Red Cranberry,  
White Cranberry,  
Potatomie, (new variety,)  
White Pea,  
Early Mohawk,  
Large White Kidney,

#### POLE OR RUNNERS.

Large White Lima,  
Sieva, or Carolina Lima,  
Scarlet Runners,  
White Dutch Runners,  
Red Cranberry,  
White Cranberry,  
Yellow Cranberry,  
Dutch Case Knife,  
Butter,  
London Horticultural,  
Indian Chief, (new sort; the finest String Bean known,)

The earliest kind named is the Early Mohawk. These, with the other bush Beans, should be planted, for first and succession crops, from the middle of Spring to the middle of Summer.

The Pole or Runner Beans are mostly of a more delicate nature, and the planting of them should be delayed till the last of Spring, putting them in the ground in hills two or three feet apart, and setting poles for them to run upon. The dwarf Beans are planted in rows. The most tender kinds, as the Large White Lima, may be forwarded by sprouting them in a hot-bed and transplanting them at the proper time.

### BEEF.

Long Blood,  
Early Red Turnip-rooted,  
Early Orange Turnip-rooted,

French Sugar,  
Mangel Wertzell.

The three first are esteemed best for table use; may be sown from April to June in deeply pulverized soil. The plants should stand five to six inches apart in the drills, but the seed should be put in thicker to ensure a good crop.

The two last-named kinds are most valuable as good for stock. To preserve beets during the winter, pack them in a dry cellar, covering them with earth.

**BORECOLE.**—Under this head we have the dwarf kale, which is an excellent green for winter and spring use; being dwarf it is easily preserved during severe weather; and Scotch kale, which is sown in May and transplanted and treated as winter cabbage.

## BROCCOLI.

Large Purple Cape,

Early White.

The Broccoli produce heads like Cauliflower in Autumn. The Large Purple Cape, appears to be the best adapted to our climate. Sow in seed-beds middle of Spring, transplant into very rich ground when eight to twelve inches high, and manage generally as usual with Winter Cabbage.

BRUSSELS' SPROUTS.—Are cultivated for the small heads which spring in considerable numbers from the main stem. Much esteemed in some parts of Europe, but here it has attracted but little attention. Sow in seed-bed middle of spring, and transplant and manage as with winter cabbage.

## CABBAGE.

Early York,

Red Dutch, (for pickling,)

Early Sugar Loaf,

Large Late Drumhead,

Early Butterseed,

Green Globe Savoy.

Early Flat Dutch,

The first named is the earliest. For winter use, the Green Globe Savoy, and Large Late Drumhead should be sown; the former having the more tender, and the latter larger and more solid heads. To obtain a good crop of Cabbages it is requisite that the land should be well manured and well cultivated, else a failure may be, with a degree of certainty, anticipated. To preserve the heads during the winter, bury the stalk and part of the head with earth—over which, spread straw or other litter.

## CARDOON.

Large Solid Stalked.

The tender stalks of the inner leaves rendered white and delicate by earthing-up, are used for stewing; and for soups and salad in Autumn and Winter. Sow early in the Spring, and when one year old, transplant to permanent positions.

## CARROT.

Long Orange,

Altringham,

Early Horn,

Large White or Field.

The two first are esteemed the better kinds for table use. The two last are raised for stock, though probably the Long orange is as good for that purpose.

For domestic use, sow early in Spring in drills, in deeply dug and well manured ground,—the drills should be twelve or eighteen inches apart, —when the plants are up a few inches, weed and thin them so as to stand four or five inches from each other. To preserve during Winter remove to a dry cellar.

## CAULIFLOWER.

Early Dutch,

Large Late London.

Sow the early sort in hot-beds, and transplant into rich soil. The late sort to be treated like the Cape Broccoli, which it resembles.

## CELERY.

White Solid,

Red Solid.

There are several other kinds lately introduced, but the two kinds

above named are equal to any. Sow in hot-beds, and transplant into a rich, moist place. This vegetable is a favorite salad.

**CHERVIL.**—Is used as a salad. Sow in narrow drills in May.

**CORN SALAD OR VETTIKOST.**—Used as a small salad throughout the winter and spring. Sow thickly in drills first of autumn, and sprinkle with straw on the first approach of severe weather.

**CURLED CRESS OR PEPPER GRASS.**—Used as a small salad. Sow very thickly in shallow drills, at short intervals throughout the season.

#### CUCUMBERS.

Early Frame or Table,  
Early Cluster,

Long Green Prickly,  
Gherkin.

To obtain them early, plant the seed in a hot-bed, or in elevated hills, well manured with rotten horse-dung, and covered with glazed frames. But in order to grow fair, handsome cucumbers, the soil should be rich, light, and warm, and well mixed with manure; or a good shovel full or more may be put into each hill, and thoroughly mixed with the soil in the hill. Plant in hills about four feet apart each way, elevating the hills a little above the level of the ground. Put in eight or ten seeds into each hill, and cover them half an inch deep with fine dirt, and, as in all other planting, press the earth a little over the seeds with the back of the hoe. When the plants are up examine them closely, as they are frequently attacked by the yellow bug or fly. To prevent this, take soot or rye flour, sifted ashes, and ground plaster, equal parts of each, well mixed together, and dust the plants all over with it. If the plants are dry, sprinkle them with water before you dust them. Keep the ground loose and clear of weeds, and in dry weather water your plants freely. After they have attained a vigorous growth, and the danger from insects is over, they may be thinned out, leaving two or three of the most thrifty in a hill. Those intended for pickling may be planted later. The cultivation and management of these is the same as the others, excepting that the hills should be at least five feet apart each way. Some gardeners recommend nipping off the first runner bud of cucumbers and melons, from an idea that they will become more stocky and fruitful.

**EGG PLANT.**—Sow in hot-bed or other protected place very early in the spring, and late in spring transplant into very rich ground, two to three feet apart. The seed does not vegetate freely—repeated sowings are sometimes necessary.

**ENDIVE.**—Sow in May to July in shallow drills; thin out the plants to stand eight to ten inches apart; tie up to blanch as needed.

**KALE.**—Plant in hills two feet apart. It is forced into growth in the spring, blanched and used as asparagus.

**LEEK.**—This is a wholesome and useful herb, and is so hardy as to endure the extremes of heat and cold without injury. Sow early in drills eighteen inches apart, and thin the plants so that they may be six inches apart. The stalks of the plant are much used in soup.

**LETTUCE.**—This requires a mellow soil. It should be sown as early in the spring as possible. To insure a very early supply it may be sown late in the fall—it will then start early in the spring; but to obtain a con-

stant and regular supply through the season, it should be sown every month from March to September. It may be sown broadcast moderately thin, or in rows from twelve to eighteen inches distant, according to the usual size of the different kinds. Rake in the seed lightly with a fine tooth garden rake. When the plants are up stir the ground lightly when it is dry, and clear out the weeds: thin the plants where they crowd each other. Those intended for large heads should stand eight or ten inches apart; the hardy kinds, such as the large green head, ice cross, and brown Dutch, may be sown in September, and covered with straw at the approach of severe winter. Any kind may be sown in hot-bed in March, and transplanted in the open ground at the proper season.

## MELON.

|                          |                               |
|--------------------------|-------------------------------|
| Minorca, (green flesh.)  | Skillman's Fine-netted Melon, |
| Pine Apple,              | Large Round Water,            |
| Green Citron,            | Long Carolina Water,          |
| Nutmeg,                  | Mountain Sprout Water,        |
| Large Yellow Cantaleope, | Spanish Water,                |
| Goodman's Scarlet Flesh. |                               |

Plant in hills of light soil, the latter end of June. The Mountain Sprout attains a large size, but the Long Carolina is the favorite Water Melon. The Goodman's and Skillman's are superior new varieties of Musk-melon.

**MUSTARD.**—The white and broad leaf kinds are excellent for salad or greens. They should be sown very early in the spring, and in a rich, warm soil, in shallow drills, ten inches apart, and kept clear from weeds. After the crop is off, the ground may be planted for cucumbers for pickling, or used for a succession of salad or radishes. The brown mustard seed is the best for grinding; it is a palatable and healthy condiment, and may be sown broadcast or in drills, and kept clean from weeds. Mustard is now cultivated extensively as a field crop, by sowing it broadcast or in drills from one foot to eighteen inches apart. Mow it when ripe, and cure it like grain or hay, and thresh out the seed in a grain thresher. It yields from ten to fifteen bushels per acre, worth \$3 00 to \$4 00 per bushel. It is a great exhauster of the land when grown for seed, and requires a rich soil. It is sometimes plowed in green to enrich the land. When sown in drills, from one and a half to two quarts of seed are enough per acre; broadcast it would require four quarts per acre.

**NASTURTIUM.**—The flowers and young leaves are used as a salad.—The seed-pods are gathered while green and tender, and pickled.

**OKRA.**—This vegetable is used in soups and stews, and deemed unusually wholesome. Plant in May or June, in hills two or three feet apart, allowing two or three plants to stand in a hill. The seed is liable to rot in the ground, should be put in thickly to secure the requisite quantity of plants. Very rich ground is demanded by this vegetable.

## ONION.

|                 |                        |
|-----------------|------------------------|
| Large Red,      | Silver Skin or yellow. |
| White Portugal, |                        |

The seed should be sown in drills one inch deep and twelve inches

apart in light or strong land highly manured with guano, horse or hog dung, after the weather has become mild and settled. Thin the bulbs out to stand two to four inches apart. For fall sowing the White Portugal is preferred. For family use the Silver Skin is most used—and where they are to be kept a long time—the Large Red. Sow 4 to 5 lbs. seed per acre.

**PARSLEY.**—Sow early in the spring, in rows or beds. If the seed is soaked in warm water some hours immediately before sowing, it will vegetate more speedily. It is not uncommon for it to lie in the ground two or three weeks before it vegetates if not well soaked previous to sowing.

**PARSNIPS.**—This root is among the most valuable raised for farm stock. They require a deep, rich, loose soil, and may be sown about the same distance from each other as carrots. The seed need not be soaked before sowing; but it should be put in the ground early, while the ground is wet, which will ensure its immediate vegetation. Unlike all other roots, except the artichoke, the parsnip may remain in the ground throughout the winter, without injury from frost; but care is requisite for the removal of all standing water from the ground over them, or decay will inevitably follow. About two lbs. of seed are required per acre.

#### PEAS.

|                                      |                        |
|--------------------------------------|------------------------|
| Earliest Dwarf,                      | Early Washington,      |
| Cedo Nulli, (early)                  | Dwarf Blue Imperial,   |
| Hill's Early Dwarf, (favorite early) | Large Dwarf Marrowfat, |
| Groom's Early Dwarf,                 | Knight's Tall Marrow,  |
| Bishop's Early Dwarf,                | Prince Albert.         |

These are adapted to almost any dry soil; yet they will give a much greater yield on a rich, than on moderately fertile land. As with beans, fresh dung is not so good for them. They will bear a much heavier soil than the bean, good clays being highly favorable to their growth. The lands intended for peas should be prepared by fall plowing, and the seed may be sown on the field as soon as the land is sufficiently settled in the spring after the heavy frost. They may be sown either broadcast or in drills, and harrowed or plowed in two or three inches deep. In the latter case they will admit of light plowing or harrowing immediately after they are up, by which weeds may be exterminated, and the growth of the crop be measurably promoted. Where the soil is eminently adapted to them, and the seeds take well, the broadcast sowing is equally productive and efficient in preventing weeds, as their vigorous growth effectually overshadows the weeds and keeps them in subjection.

**PEPPER.**—Sow each kind in drills, on a warm border late in spring or commencement of summer, and thin them to stand 16 or 18 inches apart. Or they may be sown early in the season in a frame or flower-pot, and transplanted.

**POTATOES.**—This root is the product of almost every soil, although a dry, rich one is best suited to them. A sod turned over in the preceding autumn, so as to become well rotted in the spring after the grass has well started, is perhaps the best suited to give a fair yield, and at the same time a fine healthy, well matured return. They may be planted in hills

or drills, according to the judgment of the cultivator. Whole potatoes of a medium size are better for planting than small, or large cut ones. They should be well hilled up in hoeing. The hills may be about three or three and a half feet apart; or if in drills, they may be three and a half feet asunder, and the potatoes placed about ten inches apart. There are a variety of choice potatoes which are at times popular in different parts of the country, and which, from the introduction of new and favorite varieties, or the older ones becoming poor bearers, or from other causes, fall into disuse. Among the best of the present time may be mentioned the kidney, the pink eye, the carter, the mercer, &c. It requires from twelve to twenty bushels of seed, for planting, per acre.

**PUMPKINS.**—This is a valuable field crop for fall and early winter feeding, for cattle, sheep, and swine. It is usually planted among corn and potatoes, which is a good practice. But it may be advantageously grown by itself on a rich, dry, well pulverized soil, planting in hills, at a distance of six to seven feet apart each way. The cultivator can do all the work for them. The large yellow pumpkin is the best.

#### RADISH.

Early Scarlet Short-top,  
Long Salmon,

White Turnip-rooted,  
Scarlet Turnip-rooted.

The two first are very similar; the first is preferred for its more brilliant color, though the second is more brittle. They should be sown early in the spring, in a warm situation. The land should be well manured, deeply dug, and raked free from clods and stones. For a succession of crops sow once in two weeks.

**RHUBARB.**—This is cultivated for the stalk of the leaf which possesses an agreeable acidity, and resembles the gooseberry when made into pies or tarts; it is an excellent substitute, as it is fit for use before green fruit can be had. The roots continue vigorous many years.

**RUTA BAGA, OR SWEDISH TURNIP.**—This may be sown broadcast on land prepared similarly to beets, and then thinned out with the hoe, or sown in drills. The former method is preferable in one respect, as it gives a much larger supply of food to the turnip beetle or fly, which may still leave enough for the farmer after it has eaten his fill, or if it is cut off by drought or the fly, it leaves sufficient time for resowing. Early sowing is best, as it ensures a good crop of large roots, with proper attention; and soaking the seed in the most offensive curriers' oil for two or three days, and then rolling in plaster, is a help to the young plant, as they both assist its rapid growth, and the oil is nauseating to the insects in its first tender leaves, which are most liable to destruction. About one and a half lbs. per acre of seed is required.

**SALSIFY, OR VEGETABLE OYSTER.**—The roots are boiled like carrots as a vegetable dish, or after being parboiled made into cakes, with paste, and fried like oysters, which they closely resemble in both taste and flavor. Cultivated in all respects like the carrot.

**SORREL.**—The garden sorrel is used as a salad. Sow in June, in drills, and thin the plants to twelve inches apart.

**SPINAGE.**—Sow at any time of the year when the ground is in a proper condition to be worked. It produces thick, succulent leaves of a large size. May be sown either broadcast or in drills. For spring and summer use, sow as early as the ground can be tilled, and afterwards at short intervals. For winter and early spring use, sow middle of autumn. The latter sowing will need a sprinkling of straw or long manure on the arrival of cold weather. Spinage is one of those vegetables for which the ground cannot be too rich; the stronger it is the more succulent will be the leaves, and of course the more delicate and tender.

#### SQUASH.

Winter Crookneck,  
Canada Crookneck,  
Autumnal Marrow,

Summer Crookneck,  
Early Bush Scollop.

The two first are used both as a vegetable dish and for pies, and keep through the winter. The third is a much esteemed variety, and keeps well till January. The two last are early, of compact bushy growth, and of course better adapted to small gardens. Plant in hills, four to six feet apart each way, in May or the first part of June.

#### TOMATO.

Large Red,  
Large Yellow,

Small Pear-Shaped.

The first is the variety usually preferred. The last is of small size and used for pickling. For early use, sow in hot-beds and transplant into warm soil, setting the plants in rows, three feet apart.

#### TURNIPS.

White Flat,  
Early Flat Dutch,  
Yellow Stone,  
White Garden Stone,

Yellow Malta,  
Large Scotch Yellow,  
Ruta Baga,  
Long Yellow French.

The early Flat Dutch, Yellow Stone and White Stone are the best for family use, and may be sown early in the spring. The other varieties should be sown later, say in middle of August, though all, but the Ruta Baga, which should be sown as early as the date named, will yield a good crop if not sown till the first of September. The Ruta Baga is more generally sown for stock than any other, and is excellent for table in the spring when other sorts have become pithy. To protect, during winter store in a good, cool, airy cellar, or in the field, covering them with earth.

#### Sweet and Pot Herbs.

Anise,  
Basil, Sweet  
Caraway,  
Coriander,

† Fennel,  
† Lavender,  
Marjoram, Sweet  
† Sage,

Summer Savory,  
† Thyme,  
† Rosemary,  
Bene Seed.

These impart a strong spicy taste and odor, and are used in various culinary operations. Those marked thus † are perennial and when once obtained, may be preserved for years.

Of such sow the seeds very carefully in seed-beds, about the middle of spring, and in the ensuing autumn or spring transplant them to convenient situations. The others are annuals, or such as come to perfection the

first season and die : the seeds of these may be sown carefully in shallow drills, middle of spring, and when the plants are up a few inches thin them to proper distances. To preserve for use, dry thoroughly, rub the foliage almost to powder, and put it in jars or bottles tightly corked.

In connection with the above, the proprietors have put up for them, a choice assortment of *Flower* and *Medicinal Herb Seeds*, which they offer for sale at retail, or by the hundred to those wishing for a good variety to sell.

## ALPHABETICAL CATALOGUE

OF

### Grain, Grass, Garden and Field Seeds,

IN WHICH IS SPECIFIED THE DIFFERENT KINDS AND VARIETIES.

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| Artichoke, Green Globe,           | Melon, Large Round Water,        |
| Asparagus,                        | Long Carolina Water,             |
| Beet, Early Turnip Blood,         | Large Yellow Cantaloupe,         |
| Long Blood, (true)                | Minorca, (Green flesh)           |
| Bassano, (new, fine and early)    | Green Citron, do.                |
| French Sugar,                     | Pine Apple, do.                  |
| Mangel Wurtzel, (for cattle)      | Nutmeg, do.                      |
| Brocoli, Early White,             | Mustard, White or English,       |
| Large Purple Cape,                | Brown or Black,                  |
| Cabbage, Early York,              | Nasturtium, Large,               |
| Early Dutch,                      | Crimson,                         |
| Early Sugarloaf,                  | Onion, Large Red,                |
| Early Vanack,                     | Silver skin, or Yellow           |
| Green Globe Savoy,                | White Portugal,                  |
| Large Late Drumhead,              | Okra,                            |
| Red Dutch, (for pickling)         | Parsley, Double Curled,          |
| Cauliflower, Early Dutch,         | Parsnip, Large Dutch,            |
| Large Late London,                | Guernsey,                        |
| Carrot, Early Horn,               | Pepper, Squash (thick skin)      |
| Altringham,                       | Mountain, (very large)           |
| Long Orange,                      | Pumpkin,                         |
| New White,                        | Radish, Early Scarlet Short Top, |
| Celery, White Solid,              | Long Salmon,                     |
| Cress, Curled, or Peppergrass,    | Black Spanish,                   |
| Cucumber, Early Green Cluster,    | Scarlet Turnip Rooted,           |
| Early Frame,                      | White Turnip do.                 |
| Long Green Prickly,               | Rhubarb,                         |
| Gherkin, (fine for pickling)      | Salsify, or Vegetable Oyster,    |
| Egg plant, Purple,                | Spinage, Round Leafed or Summer, |
| Endive, or Succory, Green Curled, | Prickly or Fall,                 |
| Kale, Green Curled Scotch,        | Squash, Early Bush Scollop,      |
| Lettuce, Early Curled Silesia, ✓  | Summer Crookneck,                |
| Royal Cape Head,                  | Winter Crookneck,                |
| Imperial Head,                    | Canada Crookneck,                |
| Tennis Ball or Rose,              | Autumnal Marrow,                 |
| Large Green Head, (extra)         | Tomato, Large Red,               |
| Drumhead,                         |                                  |

Turnip, Early White Dutch,  
 White Flat Winter,  
 Purple Top Flat,  
 White Malta,  
 Yellow Malta,  
 Large Scotch Yellow,  
 Yellow Stone,  
 Ruta Baga, or Swedish.

### HERBS, &c.

Anise,  
 Caraway,  
 Coriander,  
 Sweet Basil,  
 Fennel,  
 Hyssop,  
 Lavender,  
 Sweet Marjoram,  
 Sage,  
 Summer Savory,  
 Winter Savory,  
 Saffron,  
 Thyme,  
 Ornamental Flower seeds,  
 Beans, Dwarf,  
 Early Yellow, six weeks,  
 Early Black Eyed,  
 Early Pheasant Eyed,  
 Early Marrow,  
 Early Cluster, (very early)  
 Early China,  
 Early Mohawk,  
 French White,  
 White Cranberry,  
 Red Cranberry,  
 Bush Horticultural,  
 Russian Speckled,  
 Potawatomie,  
 Large White Kidney,  
 Yellow Cranberry,  
 Caseknife,  
 White Pea,  
 Beans, Pole, Large White Lima,  
 Sieva, or Small Lima,  
 Red Cranberry,  
 White Cranberry,  
 London Horticultural,  
 White Horticultural,  
 Indian Chief,  
 Scarlet Runners,

White Dutch Runners,  
 Caseknife,  
 Speckled Canada Caseknife,  
 Kidney,  
 Peas, Earliest Dwarf,  
 Hill's Early do  
 Early Washington Dwarf,  
 Early Mayduke do.  
 Cedo Nulli do.  
 Groom's Early do.  
 Bishop's Early do.  
 Early Sugar do.  
 Blue Prussian,  
 Green Prolific,  
 String (very Extra)  
 Blue Imperial,  
 Large Dwarf Marrowfat,  
 Corn, Early Jefferson (for boiling)  
 Sweet or Sugar do.  
 Hobart's Golden Field,  
 Webster do.  
 Early Canada do.  
 Dutton,  
 Tuscarora,  
 Parching,  
 Bird Seed, Canary,  
 Hemp,  
 Lettuce,  
 Millet,  
 Maw,  
 Rape,  
 Unhulled Rice.

### GRASS SEED AND GRAIN.

Timothy or Herds Grass,  
 Northern Red Top,  
 Southern Red Top,  
 Rhode Island Bent,  
 Fowl Meadow,  
 American Orchard Grass,  
 English do do  
 Perennial Rye Grass,  
 Kentucky blue joint,  
 White Dutch Clover,  
 Northern Red Clover,  
 Western do do  
 Southern do do  
 Lucerne,  
 White Flint Winter Wheat,  
 Hutchinson's bearded do

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|                |        |               |
|----------------|--------|---------------|
| Italian Spring | Wheat, | Bedford Oats, |
| Black Sea do   | do     | Imperial do   |
| Golden Straw   | do     | Barley,       |
| Winter Rye,    |        | Buckwheat,    |
| Spring do      |        | Millet,       |
| Flax Seed.     |        | Broom Corn,   |

**POTATOES.**

|               |                |         |       |
|---------------|----------------|---------|-------|
| Hill's Early, | Peach Blossom, | Carter, | Veto, |
|---------------|----------------|---------|-------|

The above seeds are of the very best quality, being raised by the most experienced growers expressly for our establishment, except such sorts as will not ripen to advantage in this country, which are imported from the first houses in Europe. Aware of the great complaint that has hitherto existed with regard to seeds, and of the importance to the Farmer and Gardener of having such as can be relied upon; every effort has been made by us to procure and vend such only as will give entire satisfaction.

Dealers who prefer to have their seeds put up ready for sale, will be furnished with them in small papers, neatly labelled, with directions for culture, &c., in boxes for retailing, of any size from \$1, to \$10.

**ANNUAL, BIENNIAL AND PERENNIAL FLOWER SEEDS,**

A superb assortment, comprising such kinds only as have proved suited to our climate.

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## FERTILIZERS.

We shall merely treat of such fertilizers as are usually kept on sale, and in doing this it is impossible to give anything more than brief, general directions, as climate, the nature of soil, the crop to be raised, and many other particulars must be taken into consideration in their proper application. Great waste is often made in applying manures. For example, bone dust, where there may already be sufficient of the phosphates in the land; lime, where the soil is full of it; plaster, where potash is more requisite, &c., &c. In such cases these manures have little or no effect, and in a measure are lost to the land. Barn-yard manure, peat, and muck are often applied to wheat and other small grain crops, when they only serve to injure the grain by forcing a large growth of straw. Grass, corn, and roots will take any kind and quality of manure without injury; and as a general rule, the small grains should succeed these crops, at which time ashes, plaster, bones, or lime may be applied; and if the soil be poor, a top dressing of guano, rotted barn-yard manure, or composts of fish with peat and muck, may be added.

**ASHES.**—These may be used leached or unleached, with good effect at all seasons, and on all kinds of soils, though they best suit lands of a light sandy or gravelly nature. From ten to one hundred bushels per acre are applied. Grass and turnips are most benefitted by them, and they have a marked effect on corn, wheat, and other small grains. They should be spread on grass lands early in the spring, or just after mowing; be put

round the stalks of corn after the first or second hoeing; spread broadcast over the turnip crop after sowing, or be brushed in with the seed; and applied in the same way to wheat, rye, and other small grains, in the fall or spring. Anthracite coal ashes have lately been experimented upon, and found to have a marked effect on grass and corn. Price of wood ashes, 10 to 13 cts. per bushel in this market; anthracite ashes may be had for the gathering.

**BONE DUST.**—This substance may be applied precisely like ashes, except not in so large quantities; ten to thirty bushels per acre is the most that we could recommend. Its effect on Indian corn is not as good as ashes. It best suits grass, wheat, and turnips.

Sawings of bone are fifty per cent more powerful.

**CHARCOAL DUST.**—This also may be applied like ashes, and in any quantity, from ten to two hundred bushels per acre. It is a great absorber of moisture and ammonia from the atmosphere, and is, therefore, particularly valuable on light soils. Keep it as near the surface as possible. It is an admirable mixture in composts of all kinds, especially such as abound in putrescent manures. It fixes the ammonia in them, and takes away all unpleasant smell.

**GUANO.**—*Caution in Application.*—Be very careful to place the guano so that it will not touch the embryo, or young roots, or stalks of corn, potatoes, cabbages, tobacco, sugar cane, cotton, or any plant that has but one stem from its root; for it is of such a burning nature, that if a portion no larger than a small pea comes in contact with the plant, before being watered or rained on, or undergoing partial decomposition, it instantly kills it. With grass and small grains this caution is not important, as other shoots from the roots will immediately supply the place of those killed.

*Preparation.*—Before using guano, pass it through a fine sieve, and all lumps remaining break up, and these pass through the sieve. Now take at least four times its bulk of sand, or dry sandy, or light loamy soil, and pass this through a coarser sieve, if you have one, and mix it in layers with the guano. Let this compost lie a few days—several weeks would be better—then toss it over and beat up well together, and it will be fit for use. Some prefer mixing the guano with ten or twenty times its bulk of soil for a compost, and do not take the trouble of sifting it, but mix them together in alternate layers as well as it can be done with a shovel. Sifting, however, is best, as it is done so much more evenly. Sawdust is an excellent material with which to mix guano; but powdered charcoal is perhaps the best of all, as it fixes the ammonia, absorbs its unpleasant smell, and is in itself an excellent manure. When convenient to be obtained, plaster of Paris ought to be used in the compost, at the rate of thirty to fifty lbs., for every one hundred lbs. of guano; it acts in the same way as charcoal. Lime and ashes must be avoided in composts, as they rapidly expel the ammonia, the most valuable part of the guano. Muck, if possible, should not be used for the compost, as it is too moist and tenacious to form a proper mixture. The same objection holds good

against clay or any tenacious soil. Nevertheless, if there be no other soil at hand, muck or clay may be thoroughly dried and pulverized, and then used. Guano should not be mixed with barn-yard manures, or indeed with any *moist* substance, as these cause it to undergo the very decomposition requisite to promote vegetation. The compost should be made under cover, unless the weather be dry. Rain would be quite injurious to it, in hastening the decomposition of the guano, and expelling its ammonia in the atmosphere.

*Quantity applied per acre.*—This depends upon the kind of soil and its condition, and the kind of crop to be grown. From two hundred and fifty to four hundred lbs. of guano per acre is the safest quantity to apply. It acts quickest in a light sandy soil or loam, and is excellent to start crops on cold, moist land. It hastens the ripening of crops on all kinds of soil.

Guano should be spread broadcast upon grass-lands, early in the spring, and directly after mowing. On grain, early in the spring, or in the autumn directly after being sown. When applied to corn, either pure or in compost, a table spoonful or so may be put into each hill, and a little dirt thrown over, and then drop the seed, or it may be hoed in round the corn the first time hoeing. Apply it in the same way to peas, beans, potatoes, and other root crops, melons, &c.

*Steeps and Liquids.*—For one pound of guano use five, ten, or even twenty gallons of water; or at the same rate for a smaller proportion. Stir it up well and cover over the vessel tight, so as to prevent the escape of the ammonia, and let it remain from one to three days before being used. Now water *around* (not *upon*) the plants as occasion may require. If this liquid touches the plant, or its leaves, it is apt to burn it. Previous to watering, stir the earth well around the plant. Corn and other seeds may be steeped in this liquid from three to twenty-four hours before sowing. It then comes up unusually quick and grows rapidly.

*LIME.*—This may be applied at any season, at the rate of twenty to two hundred bushels per acre; but we would prefer moderate doses of not over fifty bushels, and put it on the oftener. Like charcoal, it does best kept near the surface, and in other respects may be applied like it. It best suits a clayey or loamy soil; its efficacy on light sands and gravel is much doubted. Lime is easily kept in large heaps in the open air by throwing a little water on top, which slakes sufficient to make a fine smooth crust over the whole. This soon dries hard, and forms a roof impervious to the rain. When the lime is to be used, the heap is broken into near its base, and whatever is wanted is taken out, and another crust formed over this broken part in the same way as above.—There is very great difference in lime, and an analysis of it should be required before purchasing, as some qualities are three times as valuable as others. It is not so much used in N. E. as at the South and West.

*PLASTER OF PARIS.*—Sow this broadcast upon grass or grain, early in the spring, at the rate of two or three bushels per acre. It requires to be sown early, so as to have the benefit of moisture, and to ensure its decomposition. It best suits clover, and is very good for potatoes and turnips.

**POUDRETTE.**—This is an excellent manure to start corn and other products, and give them a quick growth, but its effects are not lasting; a second dose, therefore, ought to be added at the second time hoeing. Two or three barrels are enough for one acre. For corn put one gill into the hill, over or under the seed, when planted. Potatoes should have two gills per hill, and other crops in proportion. For soaking seeds, dissolve in the proportion of one quart of poudrette thoroughly in a gallon of water, to an extent sufficient for the purpose required, and then soak the grain or seed in the solution according to its nature—as more particularly given in the following instructions. The soaking must take place immediately before planting or sowing. By this previous operation the corn, grain, or other seeds, will start sooner, be stronger, and less liable to attack from worms or birds. But if kept in the solution too long it may injure the germinating quality of the grain or seed. It will increase the yield, and the liquid after the soaking has taken place, may be applied to anything in the garden or grass ground. The seed after it comes out of the liquid may be rolled in ashes, plaster, or sand, to separate them. Every farmer may make his own poudrette by mixing the faeces with peat or muck, or by drying it with charcoal dust, or plaster of Paris. Either of these substances takes away all unpleasant smell.

## FRUIT TREES.

For the directions on transplanting and pruning, below, we are chiefly indebted to catalogues of experienced nurserymen, from which we have copied with slight additions and alterations.

**TRANSPLANTING.**—It is frequently the case that a tree which has received all the care and attention which can be bestowed upon it by the most experienced nurseryman, is transplanted to a soil of very inferior character, and being thus stunted in its growth is the frequent cause of dissatisfaction to the purchaser. The planter should therefore bear in mind that, with the exception of very fertile alluvial bottoms, like those of the Mississippi, &c., it is difficult for the soil in which a tree is planted, to be too rich, and that the rapidity of its growth, and its subsequent productiveness, are very much influenced by the proportion of fertilizing matter contained in the soil.

Before planting an orchard, the ground should be thoroughly *subsoiled or trench plowed*, to the depth of eighteen inches or two feet. This is always done in Europe, but scarce ever thought of in the United States; and yet we consider it the first and most important operation in the preparation of ground for an orchard, unless it be so rocky as to render this impossible.

After the trees are set out the ground should be well cultivated, and if a poor, soil as highly manured as the means of the cultivator will admit. It is impossible for a tree to flourish, as it should, when the roots

are surrounded and covered with a thick sod. When the tree is isolated, as in a garden or lawn, a rich compost of earth and manure should be dug in around it, care being taken that no pure manure be allowed to come immediately in contact with the roots. The ground about these also, for the space of two or three feet, should be kept mellow until the tree is of a large size; and it would also be well to dig in a portion of manure about the roots every spring.

Many of the most experienced cultivators regard the fall, immediately after the first hard frost has arrested the growth, as the best season for transplanting every variety of trees but evergreens, which should be planted in the spring. Where, however, it is not convenient for the cultivator to give them attention in the fall, deciduous trees may be deferred until spring. In sections where the cold is somewhat severe, as on the western lakes, and in some parts of New England, it is more safe to plant in the spring the stone fruits and pears; and if they are imported in the fall, to keep them in a dry cellar until spring.

The reason for the preference for the autumn is obvious: when trees are transplanted at that season, the earth becomes during the winter properly settled about the roots, and they are ready to throw out fibres in the spring. The spring is preferred for evergreens, for the reason that their period of hibernation differs from that of deciduous trees, and experience has shown that they succeed best when thus planted. When a tree is removed, great care should be taken to preserve the roots uninjured and entire; if this precaution has not been observed, the top should be lessened in proportion to the loss sustained by the roots.

When the tree has been some time out of the ground, it is well to immerse the bodies and roots in water for about twenty-four hours; this will much benefit it, and advance its vegetation. The holes for receiving them should be sufficiently large to admit the roots without crowding or bending,—from three to six feet in diameter, and from one to two feet deep, according to the size of the trees. The subsoil should be entirely removed to this depth, and its place filled with rich mould, well combined with compost or manure fully fermented. All bruised or broken roots should be shortened and smoothly pared with a knife. Let a person hold the tree upright, while the operator pulverizes the earth, and scatters it among the roots. Let the tree be shaken gently while this is being done, and let the earth be carefully filled in around every root, even the smallest fibre; it is all-important that the soil should come in contact with every portion of the root. When the hole is three quarters filled, pour in a few gallons of water, according to its size, and after it has settled away fill up the hole, pressing the earth around the tree with the foot. Earth watered in this way will retain its humidity a long time, while water poured on the surface, after the hole is filled, is very injurious, causing the top of the soil to bake to such a degree as to prevent the access of air and moisture, both of which are highly essential to the prosperity of the tree. When the weather is very dry, put straw, hay, leaves, or even fine brush, if nothing else is to be had, round the bodies of the newly transplanted trees, to retain the moisture. This is infinitely better than watering them. One of the most universal and fatal errors in planting trees is placing them too deep; we have known many

fine and thrifty trees die from this cause alone ; they should not be planted more than an inch deeper than they stood in the nursery, and if the frost is likely to heave them the first winter, a small mound can be heaped about the stem, to be removed again in the spring.

In attending to the preceding suggestions, we feel assured that the cultivator will be amply repaid for any extra trouble or expense, by the consequent increased growth, beauty, or productiveness of the tree.

### Soils proper for different kinds of Fruit.

**THE APPLE.**—This will succeed on almost any soil not too wet ; a rich gravelly loam will, however, ensure the finest trees and fruit. For garden cultivation, we have always on hand a moderate quantity of apples on dwarf or Paradise stocks, but the best place for this tree is the orchard. Before planting, the ground should be well cultivated and mellowed, with corn or potatoes, and enriched, if necessary, with a good quantity of manure. After the trees are planted, the orchard should be kept in cultivation for some years, and even after the trees become large and are in full bearing condition, the ground should not be kept in grass more than three or four years successively. Some few years since an old orchard of our own almost ceased bearing, or bore only small and imperfect fruit, while several varieties, including the Newtown pippin, exhibited every symptom of deterioration and premature decay, that is apparent in the Virgalieu pear. We immediately broke up the sod, cultivated the ground with corn and potatoes, and applied a heavy dressing of manure, when the following year we were rewarded with a fine crop of perfectly sound apples, the Newtown pippins being of immense size, and entirely free from the least symptom of blight or decay ; nor have such symptoms made their appearance since that time. Where there is leisure, it is a good plan to thin out the fruit when the crop is too abundant. Messrs. Parsons & Co., Flushing, L. Island.

**THE CHERRY.**—This does best in a dry, rich soil, but bears abundantly even in stiff clays when well drained.

**THE PEAR.**—This succeeds best on a rich, clayey loam, with a gravelly subsoil, but will grow and bear fruit on even a poor soil, provided it is not too wet. A heavy clay soil should always be avoided, unless well drained, as this is known to be very retentive of moisture, and is frequently so highly saturated as greatly to injure, if not to kill the tree.

**THE PLUM.**—A clayey soil well drained, or rich loam, best suits the plum.

**THE PEACH.**—A sandy or light gravelly soil, not over rich, is decidedly the best for the peach, though we have seen it flourish very well in a warm climate in rolling, clayey soils, where no surface water could remain to their injury.

**PRUNING AND TRAINING.**—All trees require more or less pruning. With young trees the knife is required to form a symmetrical head, to induce luxuriance of growth, and to cause early fruit bearing. Bearing trees in orchards also require frequent pruning, to relieve the tree of all branches which are weak and crowd upon others, or uselessly consume

the nourishment afforded by the root. It is also frequently required to check too great luxuriance of growth which often induces disease and seriously affects the longevity of the tree. Care and judgment, however, are necessary, and there may be often danger of too much pruning. When a tree is healthy, produces well, not too much crowded in its branches, and free from suckers on its boughs, it will in general require very little pruning. No suckers should be allowed to grow from the root, as they divert a material portion of the sap from the branches. There is much question respecting the proper season for pruning, but our experience is very decided that the early part of summer is the best ; the sap being then in full operation, the wounded part quickly heals over, while in winter the branch to which the knife has been applied will be frequently found dead several inches below the wound.

Pruning, says Messrs. Parsons & Co., to induce early fruit bearing, may be advantageously practised when the growth is so luxuriant that few or no blossom buds are formed. In this case the branches only are frequently shortened, and the sap being accumulated in a smaller portion of wood, forms fruit buds. We have seen pear and apple trees of great age in France and Belgium, which were pruned to a pyramidal form, and presented a mass of fruit spurs, while the branches would scarcely cover a space of six feet in diameter. The most effective mode of pruning, however, is applied to the roots. We have seen this mode practised successfully in the grounds of T. Rivers, an English nurseryman, to whose kindness, during repeated visits to his establishment, we are indebted for much valuable information respecting his *modus operandi*. He digs a trench, early in November, around his fruit trees to be root pruned, then cuts off the roots with a sharp spade or knife made for the purpose, and then applies manure. By continuing this practice every year, he not only obtains early fruitfulness, but brings his trees into so compact a shape, that, being planted five to eight feet apart, a sort of miniature orchard may be formed on a comparatively small piece of ground.

The Quenouille mode of pruning and bending down of the limbs we have seen practised in France and Belgium with much success. By it the circulation is impeded, nutritious matter accumulates, and flower buds are formed. The branches are bent down and tied below the horizontal line any time during summer, while the shoots are flexible, and after being thus confined a short time, retain themselves this pendent position. This is a most certain mode of inducing fruitfulness, but though very ornamental, is a somewhat troublesome form of tree.—In Great Britain, and on some parts of the Continent, where they have not the heat of our Summers, fruit trees are trained as espaliers, either upon a trellis or upon walls, and it is no uncommon thing to see large gardens, as those of the king, at Versailles, divided into numerous small compartments by brick walls, on which are trained a variety of fruit trees. In our fine climate this is unnecessary, and nearly all trees will succeed well as standards. In some localities, it is well known that the curculio prevails more than in others. Where such is the case the farmer or gardener may advantageously cover all his stone walls or wooden fences with plums, peaches, apricots, or nectarines. When trained in this way, the curculio will not readily attack them. We know of a

number of plum trees in our vicinity, which for ten years or more had always lost their whole crop by the ravages of this insect. When, however, transplanted and placed against a wall, they matured a fine crop of beautiful fruit the first year. When trees are planted thus against a wall or fence, it is well to have them a year old, and to train the branches either horizontally, or in the fan mode, in which the branches are made to radiate from the root as a common centre. We are so convinced of the utility of fences as preventives of curculio, that we contemplate erecting a quantity of wooden wall for fruiting those kinds which are subject to its ravages.

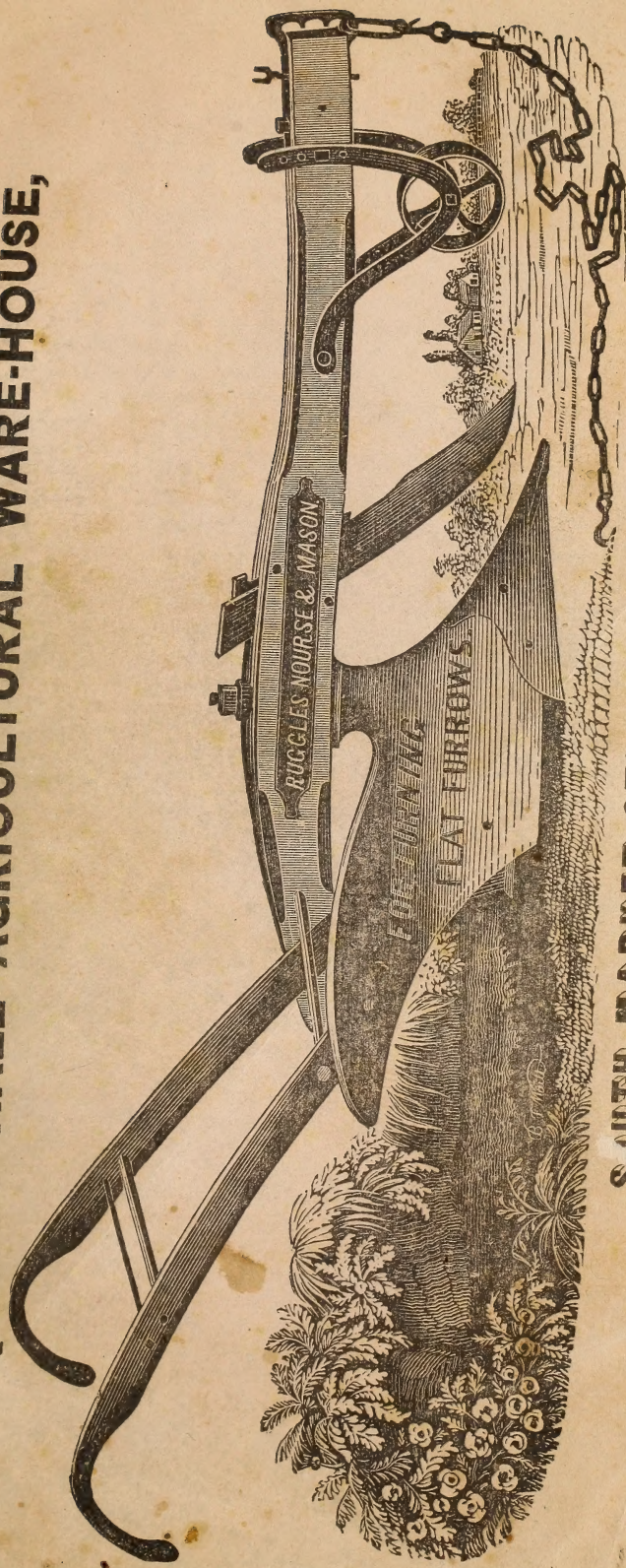
REMARKS.—We intended to have given a select list of Fruit Trees in this catalogue, but we find that these vary so much in different latitudes that it would be of little use to our readers; we beg, therefore, to refer them to the catalogues of the Nurserymen for this, as well as many other things we are obliged to omit for want of space. For the same reason we cannot treat of other fruits, such as the apricot, nectarine, fig, raspberry, gooseberry, currant, strawberry, &c. &c.

### Ornamental Trees and Shrubs.

These can be had of every variety. To fully treat of them would require a large book; we therefore recommend our readers to the catalogues of Nurserymen, and books upon these subjects. It is gratifying to observe an increased attention throughout the country to these beautiful objects of nature; and that tastefully arranged grounds, adorned with trees and shrubbery, are now considered indispensable around the family mansion, however humble it may be. The rudest log cabin is an object of interest, and a picturesque feature in the landscape, when embowered by trees or shrubbery; and for these, nothing is more beautiful than such as abound in our own native forests and fields, so that all that is required for this purpose is merely to transplant them.—Few can say that they have not time for this.

ORDERS.—It is very desirable that all orders should be sent *very early* in the season, that we may have as much notice as possible, and send the trees to their destination at an earlier period after the opening of the season of transplanting. For want of care on this head, many orders arrive when it is no longer safe to take up trees, and are necessarily left over until the next season. We would urge upon the attention of Southern and Western purchasers, the great importance of sending their orders as early as August or September. In the spring, vegetation is often far advanced at the South and West, before the frost will allow the trees to be taken up at the East; and if sent at that season, they frequently vegetate on the passage, and cause great loss to the purchaser.—In the fall no difficulty of this kind will occur, and trees are annually sent to the far western States at that season with entire success. The utmost care is taken to label distinctly, according to the invoice sent, every variety of tree or plant ordered; they are packed in matted bundles or boxes, according to the distance and probable exposure, for which a reasonable charge will be made.

**QUINCY HALL AGRICULTURAL WARE-HOUSE,**



**SOUTH MARKET STREET, BOSTON.**

